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CLAUSAL COMPLEMENTS TO ATTITUDE PREDICATES CROSS-LINGUISTICALLY: BEING GLAD ABOUT WHAT YOU THOUGHT YOU KNEW

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By Eric Anthony Follett

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Clausal Complements to Attitude Predicates Cross-linguistically: Being glad about what you thought you knew

For the degree of Master of Arts

Is approved by the final examining committee:

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04/23/2014

Head of the Department Graduate Program

Date

CLAUSAL COMPLEMENTS TO ATTITUDE PREDICATES CROSS-LINGUISTICALLY: BEING GLAD
ABOUT WHAT YOU THOUGHT YOU KNEW

A Thesis

Submitted to the Faculty

of

Purdue University

by

Eric Anthony Follett

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Arts

May 2014

Purdue University

West Lafayette, Indiana

you shall above all things be glad and young.

– ee cummings

The upcoming year's Glad's year, Buster.

– David Foster Wallace

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This thesis is the product of (almost) two years of rolling the same basic sentences around in my (and those around me's) head. I'd like to thank all the professors I've had at Purdue for all their encouragement and the many lessons they've taught me.

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LIST OF SYMBOLS

Tatar Latin Alphabet and Pronunciation guide:

Latin Script (2001)	IPA
A a	[ɑ]
Ä ä	[æ]
B b	[b]
C c	[ʤ]
Ç ç	[ç]
D d	[d]
E e	[e]
F f	[f]
G g	[g]
Ğ ğ	[ɣ]
H h	[h]
I ı	[ɨ]
İ i	[i]
J j	[ʒ]

Latin Script (2001)	IPA
L l	[l]
M m	[m]
N n	[n]
Ñ ñ	[ɲ]
O o	[o]
Ö ö	[œ]
P p	[p]
Q q	[q]
R r	[r]
S s	[s]
Ş ş	[ʃ]
T t	[t]
U u	[u]
Ü ü	[ʏ]
V v	[v]
W w	[w]
X x	[x]
Y y	[j]
Z z	[z]
‘	[ʔ]

ABSTRACT

Follett, Eric Anthony. M.A., Purdue University, May 2014. CLAUSAL COMPLEMENTS TO ATTITUDE PREDICATES CROSS-LINGUISTICALLY: BEING GLAD ABOUT WHAT YOU THOUGHT YOU KNEW. Major Professor: Elena Benedicto and John Sundquist.

In this thesis I explore the syntactic structure of emotive factive predicates in Spanish, English, Tatar, and Mayangna. I analyze emotive factive predicates of the *glad* type, such as (1).

(1) I'm glad you liked the cake.

First, I analyze the basic structural configuration of these predicates, claiming that the clausal Source of Experience argument is a complement to the lexical head *glad*. This is similar to the configuration of canonical transitive attitude predicates like semi-factive *know* and intensional *think*. Second, I claim, following Kiparsky and Kiparsky (1970) and Krapova (2010), that factive heads select complements headed by a (null) D head, and that therefore clausal complements to emotive factive heads like *glad* and semi-factive heads like *know* are in fact DPs. Three types of evidence support this claim: 1) morphological data from Tatar and Mayangna; 2) distribution of DPs in all four

languages; and 3) extraction facts from factive complements and definite/referential DPs in all four languages.

Finally, I offer a first approach at mapping the syntax of emotive factive predicates to the semantics. I propose that an intensional Operator is present in the derivation of emotive factive predicates which is absent in the derivation of semi-factive ones. I discuss the different selectional restrictions on DP complements between the two types of factive heads as well as the different flavors of presupposition that hold between emotive factive predicates and semi-factive ones. Morphological mood distribution from Spanish offers further insights into the syntactic differences between the two types of factive predicates.

This thesis adds to the body of research on factive predicates in the Minimalist tradition by offering a fresh take on an old analysis using data from understudied languages and well-studied languages alike.

CHAPTER 1. INTRODUCTION

1.0. Introduction

In this work I address the topic of clausal complements to emotive factive attitude predicates of the *glad* type cross-linguistically. Emotive factive predicates, which presuppose the truth value of their complement clause, show different semantic and syntactic constraints compared to both intensional predicates (e.g. *think*), which do not presuppose the truth of their complement clause, and semi-factive ones (e.g. *know*), which do. I will use canonical transitive attitude predicates like *know* (semi-factive) and *think* (intensional) to compare the syntactic structure of emotive factive predicates, shedding some light on the syntactic selection of complement clauses and the consequences in the semantics of attitude predicates cross-linguistically.

(1) Types of Attitude Predicates

- a. Emotive factive – glad, sad, mad, regret
- b. Semi-factive – know, remember, find out
- c. Intensional – think, believe

The main questions which drive the analysis in this thesis are: What is the basic structure of sentences like (2a); and How can we account for the ungrammaticality of extraction from complements to emotive factive lexical heads like *glad* as in (2b) and (2c)?

- (2) a. I'm glad (that) you liked the cake.
 b. *[?]What_i are you glad he liked t_i?
 c. *How_i are you glad he fixed the car t_i?

Furthermore, I will investigate the structure of emotive factive predicates (specifically of the *glad* type) crosslinguistically. I will introduce data in Spanish, English, Tatar, and Mayangna representing embedded clauses with these different attitude predicates which support the hypothesis that there is a structural difference between the complements of intensional heads and those of factive heads (both emotive factive and semi-factive). Specifically, I will propose that factive heads select DPs as complements, meaning that the complements to factive heads are DPs (whether headed by an overt or a covert Determiner). While not the main topic of this thesis, I will support the claim that complements to intensional heads are headed by an intensional Operator (see de Cuba 2007). Cross-linguistic evidence strongly supports for the claim that factive heads take DP complements, since in Tatar and Mayangna complements to both semi- and emotive factive heads are morphologically DPs.

Introducing such evidence from these two less-studied languages is one contribution of this thesis.

One major goal of this thesis is to determine which elements are at play in the derivation of emotive factive predicates (e.g. *glad*), comparing these elements to the elements present (or absent) in the derivation of semi-factive (e.g. *know*) and intensional (e.g. *think*) predicates. In this way we must be careful when grouping lexical items into categories like ‘factive’ or ‘intensional’, since multiple variables must be taken into account which define different behaviors, both syntactic and semantic. I will show that emotive factive derivations share certain elements with semi-factive predicates, and other elements with intensional predicates.

Throughout this thesis, I will discuss the syntactic structure of each of these three semantic classes of predicates (emotive factive, semi-factive, and intensional), showing that the semantic class and presuppositional varieties of a predicate are not sufficient to explain the syntactic differences between them cross-linguistically. I will share the assumption from other recent analyses of factivity that complements to factive heads are definite/referential¹, while complements to intensional heads may not be. In languages like English and Spanish, as I will show, extraction is allowed from complements to intensional heads (e.g. *think*), but not from complements to factive heads (e.g. *know* or *glad*). However, such a generalization is not true for Tatar or

¹ The concepts ‘definite’ and ‘referential’ remain to be defined more exactly in future work. A more complete discussion is undertaken in Chapter 3; however I use ‘referential’ in the sense of Longobardi 2005, “roughly, uniquely identifiable in discourse.”

Mayangna. Therefore, a syntactic account which derives constraints on movement through a mechanism which explains the definiteness or the referentiality of the complement clause is not adequate to describe the cross-linguistic distribution data or extraction facts.

Early attempts at giving a principled account of the syntactic differences between factives and non-factives were based on the distribution of syntactic types which were grammatical as complements to factive heads versus those which were grammatical as complements to intensional heads (Kiparsky and Kiparsky 1970). More recent attempts at explaining this syntactic difference between factive (e.g. *know* or *glad*) and non factive predicates (e.g. *think*) in languages like English seek to explain these differences by giving a principled explanation for the referentiality or definiteness of the factive complement, deriving both the presupposition and the extraction facts through a syntactic account of definiteness or referentiality (de Cuba 2007, Haegeman and Ürögdi 2010, Melvold 1991, Ormazabal 2005,). I will defend a hypothesis more similar to the original Kiparsky and Kiparsky (1970) analysis, a hypothesis dependent solely on the syntactic category that the factive heads select as complement, and the properties of that syntactic category in each language. Furthermore, I follow Kiparsky and Kiparsky (1970) and Karttunen (1971) in differentiating the semi-factive predicates from the emotive factive ones (also called *true factives* in the literature) due to different flavors of presupposition and the additional ‘emotive’ feature that is present in the emotive factives but lacking in the semi-factives. A structural analysis of the differences between the two types of derivations will be attempted and defended in Chapter 4.

I will discuss this topic based on data from the well-studied Indo-European languages, English and Spanish, which are both head initial. Then, to offer a fresh perspective on this issue, I will present data from Tatar and Mayangna, two unrelated languages which both happen to be head final and wh-in situ. Both of these languages show the same semantic presupposition with respect to the three classes of attitude predicates, yet they use different morphological means to express the clausal Source of Experience argument of *glad* type predicates. In both languages, such clausal complements are morphologically DPs. The semantic similarity to languages like English and Spanish but their varying morphology will be an important clue to how to analyze complements to factive heads cross-linguistically.

The main contribution to this topic in this thesis is to present and analyze cross-linguistic data which substantiates the claim that factive complements are in fact DPs. I will do so by showing that a syntactic account of referentiality or definiteness is not sufficient to account for the availability of different syntactic operations to factive complements cross-linguistically. A hypothesis based purely on the syntactic category of the complements that factive heads select can, however, explain these differences cross-linguistically. I will in turn support an account similar to Kiparsky and Kiparsky's (1970) hypothesis based on the syntactic and semantic types that are acceptable complements to emotive factive heads (e.g. *glad*), semi-factive heads (e.g. *know*), and intensional heads (e.g. *think*). In short, I will propose that all complements of factive heads (semi- or emotive) are definite DPs. Rather than rely on some universal consequences of syntactic mechanisms of definiteness or referentiality, this approach

will focus on the internal structure of the DP in each language in order to account for the different behavior cross-linguistically.

Tatar and Mayangna were selected for this work since both emotive factive and semi-factive heads take complements which are morphologically DPs, offering direct support for one part the hypothesis of this thesis, that factive complements are DPs. Spanish and English are related languages which offer the opportunity to detect micro-variation with respect to the claims here. In fact, Spanish does show subjunctive morphology on embedded verbs in clauses which are complements to emotive factive heads, but not those embedded under semi-factive ones; the morphology of the Spanish subjunctive offers on piece of evidence for the claim that emotive factives have an additional element (which I claim is some kind of intensional Operator) in their derivation, a claim which is detailed further in Chapter 4.

1.1. Introduction to the languages in question

In this section I will briefly discuss the four languages under study in this thesis: Spanish, English, Tatar, and Mayangna. I will give some essential details that should be considered as these languages are examined, and I will outline the basic syntactic and semantic types that emotive factive heads (e.g. *glad*), semi-factive heads (e.g. *know*), and intensional heads (e.g. *think*) take as complements in these languages. What is important in this section is that in all four languages, both emotive factive and semi-factive complements are part of the common ground of the conversation and are

presupposed to be true². That is, the same semantic relations of each lexical head are identical across languages. I will also briefly show that in all four languages, semi-factive and emotive factive predicates differ systematically despite the fact that they both presuppose the truth value of their complement clause.

1.1.1. Spanish

Spanish is well-studied Indo-European language. Below, in (3), is an example of an emotive factive predicate *alegrarse* ‘to be glad’ with a complement clause headed by the Preposition *de*, since *alegrarse* ‘to be glad’ is a pronominal verb and does not assign Accusative case to its Source of Experience argument. (4) shows *alegrarse* ‘to be glad’ with a causal adjunct, a derivation which should not be confused with the derivation with the Source of Experience argument as in (3); (5) shows an emotive factive with both a Source of Experience argument and a causal adjunct.

- (3) Me alegro de que hayas venido.
 SE be.glad_1s P C AUX_subj.2s come_PART
 ‘I’m glad you’ve come.’

² In Chapter 4 I will draw attention to the different flavors of presupposition between emotive factive and semi-factive predicates. Essentially the difference will be that emotive factives have an additional link between the matrix Experiencer and the truth value of the embedded proposition. Presupposition with semi-factives, on the other hand, is more accurately described as speaker-hearer based rather than between the Experiencer and the embedded event (see also Basse 2008 and references therein).

(4) Me alegro porque has venido.

SE be.glad_1s because AUX_ind.2s come_PART

'I'm glad you've come.'

(5) Me alegro de que hayas venido porque te

SE be.glad_1s P C AUX_subj.2s come_PART because you

quería ver.

want_pst.1s to.see

'I'm glad you came because I wanted to see you.'

In (6) we see a semi-factive predicate *acordarse* 'to remember', which also takes a PP headed by the case-assigning Preposition *de*, which in turn introduces a CP complement. (7) shows a canonical transitive attitude predicate with semi-factive predicate *saber* 'to know'.

(6) Me acuerdo de que llegó temprano.

be.glad_1s P C arrive_pst.3s early

'I remember that she arrived early.'

(7) Sé que llegó temprano.

know.1s C arrive_pst.3s early

'I know that she arrived early.'

Finally, in (8), I show an intensional predicate *creer* ‘to think/believe’, which is a canonical transitive attitude predicate, selecting a CP complement.

(8) Creo que llegó temprano.

think_1s C arrive_pst.3s early

‘I think she arrived early.’

Only the emotive factive heads embeds a Verb in subjunctive mood in an affirmative matrix clause, as in (3). However, when the matrix clause is negated the verb in the complement clause to *creer* ‘think’ embeds a subjunctive verb, while both factive predicates retain the verbal moods of their embedded verb³, as in (9) and (10).

(9) No me alegro de que hayas venido.

NEG be.glad_1s P C AUX_subj.2s come_PART

‘I’m not glad you’ve come.’

³ The subjunctive is not precluded in some contexts with negated semi-factive predicates, as in (i) below:

(i) Ethan no sabía que Elena se hubiera roto el pie.
 Ethan NEG know_pst.3s C Elena SE AUX_pst.subj. break_partD foot
 ‘Ethan didn’t know that Elena had broken her foot’

I will not address this issue here, the contrast between (7) and (8) is sufficient to show that barring other (possibly pragmatic) circumstances, emotive factive and semi-factive predicates do systematically embed a verb in a specific mood.

(10) Ethan no sabe que Elena se ha roto el pie.

Ethan NEG know_1s C Elena SE AUX_ind.3s break_PART D foot

‘Ethan doesn’t know that Elena has broken her foot.’

(11) No creo que hayas venido.

NEG think_1s C AUX_subj.2s come_PART

‘I don’t think you’ve come.’

With a negated matrix predicate, the complements to the emotive factive and semi-factive do not change their verbal mood, while the embedded V under an intensional V changes from indicative mood to subjunctive mood, as in (11). So, both emotive factives and propositionals may embed subjunctive verbs, while semi-factives do not do so under normal circumstances. When the matrix clause is negated with an emotive factive or a semi-factive, the event in the embedded clause is still presupposed to be true as a part of the common ground of the conversation (i.e. the information shared by the speaker and the hearer), while matrix Negation with an intensional predicate also casts doubt upon whether or not the event in the embedded clause took place from the point of view of the matrix Experiencer. This is confirmed by the following set of sentences, in which the event in the embedded clause is contradicted. Since the event in the embedded clauses of factive predicates is a part of the conversational common ground assumed to be true by the speaker and hearer, this contradiction leads to infelicity, as in (12) and (13) (in Chapter 4, I will discuss the different flavors of presupposition between the emotive factives and the semi-factives).

(12) #Juan se alegra de que Carlos haya venido a la
 Juan SE be.glad_3sP C Carlos AUX_subj.3s come_PART to D
 fiesta, pero en realidad Carlos no vino.
 party but in reality Carlos NEG come_pst.3s
 ‘Juan is glad that Carlos came to the party, but in reality Carlos didn’t come.’

(13) #Juan sabe que Carlos vino a la fiesta, pero
 Juan know_3s C Carlos come_pst.3s to D party but
 en realidad Carlos no vino.
 in reality Carlos NEG come_pst.3s
 ‘Juan knows that Carlos came to the party, but in reality Carlos didn’t come.’

(14) Juan cree que Carlos vino a la fiesta, pero
 Juan think_3s C Carlos come_pst.3s to D party but
 en realidad Carlos no vino.
 in reality Carlos NEG come_pst.3s
 ‘Juan thinks that Carlos came to the party, but in reality Carlos didn’t come.’

The important observations for this thesis are: 1) emotive factive heads (e.g. *alegrarse* ‘to be glad’) and semi-factive heads (e.g. *acordarse* ‘to remember’ and *saber* ‘to know’) presuppose the truth value of their complement clause, where presupposition is taken to be shared information by the speaker and hearer; 2) only emotive factive heads and negated intensional heads (e.g. *creer* ‘to think/believe’) may embed a verb in the subjunctive mood.

1.1.2. English

English is another well-studied Indo-European Language. In this section I will introduce the predicates under question, the emotive factive head *glad* as in (15), (16), and (17), semi-factive heads like *know*, *remember* or *find out* as in (18) and (19), and the intensional head *think* as in (20). Notice that the emotive factive *glad* is an Adjective, where Spanish used a pronominal verbal construction. The other predicates (18) through (20) are canonical transitive verbs.

- (15) I'm glad (that) you came.
- (16) I'm glad because you came.
- (17) I'm glad you came because I wanted to talk to you.
- (18) I know (that) she got here early.
- (19) I found out that she got here early.
- (20) I think (that) she got here early.

All three complements are introduced by either an overt Complementizer *that* or a null complementizer. Many native English speakers prefer to elide *that* with semi-factive *know* as in (18), emotive factive *glad* as in (15) and (17), and intensional *think* as in (20), while *that* is preferred with most other semi-factives like *find out* as in (19). Additionally, the emotive factive *glad* may take a causal adjunct with *because* as in (16), although this

should not be confused with the Source of Experience argument (as discussed further in Chapter 2).⁴

When we contradict the proposition in the embedded clause, the emotive factive *glad* and the semi-factive *know* yield infelicity as in (21) and (22) respectively, while the intensional *think* is felicitous. In Chapter 4 I will discuss the different flavors of presuppositions represented by (21) and (22).

(21) #John's glad that Mary came to the party, but in reality Mary didn't come.

(22) #John knows that Mary came to the party, but in reality Mary didn't come.

(23) John thinks that Mary came to the party, but in reality Mary didn't come.

The important observations for the following chapters are that 1) both semi-factives (e.g. *know* and *remember*) and emotive factives (e.g. *glad*) semantically presuppose their complement clause (to be discussed more fully in Chapter 4), and 2) that in terms of *that* deletion, some emotive factives (e.g. *glad*) pattern with the intensional heads (e.g. *think* or *believe*), preferring to delete *that*.

⁴ There is no overt morphological distinction between the complement types in English outside of *that* deletion, contrary to the subjunctive verb morphology in Spanish emotive factives and negated intensionals. But based on *that* deletion, in terms of surface structures, emotive factives in English tentatively pattern with intensional predicates rather than semi-factives, preferring to elide *that*. This is a point that I will not address again, however it should be addressed in future analyses.

1.1.3. Tatar

Kazan Tatar (hereafter simply Tatar) is a Northwestern Turkic (Kipchak) language, a member of the Altaic family. It is an agglutinating language, making use of a variety of suffixes for case, possession, and postpositional elements. It is head final and wh-in-situ.

In Tatar complement clauses predominantly come in two forms, tensed CPs for propositional or intensional predicates (e.g. *say* or *think*) and semi-factives (e.g. *know*), and participial DPs (the so called ‘nominal clauses’, see Sahan 2002) for emotive factive (e.g. *glad* or *regret*) and semi-factive predicates (e.g. *know* or *remember*). In other words, semi-factive heads may take either type of complement, while emotive factive and intensional predicates are restricted as to which syntactic type of complement they select. (24) shows an emotive factive predicate with a complement nominal clause marked with Dative case⁵ and nominal agreement. (25) shows an emotive factive predicate with a causal adjunct nominal clause marked with Dative Case but no nominal

⁵ The allomorphs of the Dative and Accusative morphemes that appear in each sentence are determined by the presence or absence of personal possessive endings on the Noun that is Case-marked, in addition to independent phonological factors such as vowel harmony in the case of the Dative:

- (ii) a. min kitap_nı öy_gä al_ip kayt_tı_m.
 I book_ACC house_DAT take_part return_pst_1s
 ‘I took the book to the house.’
- b. min a_nıñ kitab_ı_n öy_ı_nä al_ip
 I her_GEN book_poss3s_ACC house_poss3s_DAT take_part
 kayt_tı_m
 return_pst_3s
 ‘I took her book to her house.’

agreement with the subject, which should not be confused with the Source of Experience argument as in (24), to be discussed further in Chapter 2.

- (24) äti [Marat_niñ göbädiyä_nı aşı_gan_ı]_na şat
 dad Marat_GEN pasty_ACC eat_GAN_3s_DAT glad
 ‘Dad is glad that Marat ate the pasty.’

- (25) min [sin bja_gän]_gä şat
 I you dance_GAN_DAT glad
 ‘I’m glad because you danced.’

Below, (26) shows a semi-factive predicate with a complement nominal clause marked with Accusative Case, while (27) shows a semi-factive predicate with a tensed CP complement clause; there is no apparent difference in meaning between the two complement types with semi-factive heads.

- (26) äti [Marat_niñ göbädiyä_nı aşı_gan_ı]_n belä.
 dad Marat_GEN pasty_ACC eat_GAN_3s_ACC know_3s
 ‘Dad knows that Marat ate the pasty.’

- (27) min [sin aşı_dı_ñ dip] beläm.
 I you eat_past_2s C know_1s
 ‘I know that you ate.’

It is worthwhile to say a few words about the internal structure of the nominal clauses at this point. The reader may consult Sahan (2002) for a more detailed analysis of the Tatar nominal clauses, or Kornfilt (2001) for analysis of a similar construction in Turkish.

Both emotive and semi-factive heads introduce a nominalized participial complement. –GAN is, amongst other uses, the past participle nominalizer in Tatar. The internal structure of a –GAN clause is almost entirely verbal, while its external distribution is that of a DP. Similar constructions in Turkish have been claimed to be DP-over-CP structures, due to the fully articulated argument structure and even temporal interpretation (Alexiadou 2001; Kornfilt 2001; Sahan 2002 for Tatar). The embedded –GAN clauses contains a verbal root, thus there is a V projection. An Accusative case DP is possible inside the embedded clause, as in (24), thus we infer the presence of a full *v* projection under current Minimalist assumptions that *v* assigns Accusative case (see Kratzer 1996 for Voice head, Chomsky 2001, and Alexiadou 2001 and references therein for *v*). There is no verbal agreement on the participle, instead it shows nominal possessive agreement with subject of the embedded clause appearing in the Genitive case, both of these things indicating that there is no Nominative-assigning TP embedded under emotive-factive predicates, only Genitive-assigning DP.

And finally, (28) shows an intensional predicate with a tensed CP complement clause. A DP complement, then, is available for semi-factive predicates, but crucially not for propositional ones, as the ungrammaticality of (29) shows.

- (28) Elena [Ethan göbädiyä_nı aşı_dı dip] uyly.
 Elena Ethan pasty_ACC eat_past.3s C think_3s

‘Elena thinks Ethan ate that pasty.’

- (29) *min [sin_iñ bija_gän_ı]_n uyly_m
 I you_GEN dance_GAN_poss3s_ACC think_1s

‘I think that you danced’

Also importantly, a CP complement headed by *dip* is also ungrammatical with emotive-factive predicates, as (30) shows.

- (30) *min [sin aşı_dı_ñ dip] şat
 I you eat_pst_2s C glad

‘I’m glad that you ate.’

In terms of their semantics, the semi-factive *bel-* ‘know’ and the emotive factive *şat* ‘glad’ presuppose⁶ the truth value of their complement clause since contradicting the proposition in the clause leads to infelicity, whereas the contradiction of the embedded clause under intensional *uy/-* ‘think’ remains felicitous.

⁶ Again, presupposition here is defined as shared information by the speaker and the hearer. Chapter 4 will further discuss the different flavors of presupposition between the semi-factive and emotive factive predicates.

- (31) #Elena [Ethan_niñ bija_gän_ı]_nä şat, lekin Ethan
 Elena Ethan_GEN dance_GAN_poss3s_DAT glad but Ethan
 bija_ma_dı
 dance_NEG_pst.3s
 ‘Elena is glad that Ethan danced, but Ethan didn’t dance.’
- (32) #Alsu [Marat_niñ göbädiyä_nı aşı_gan_ı]_n belä, lekin
 Alsu Marat_GEN pasty_ACC eat_GAN_poss3s_ACC know_3s but
 Marat a_nı aşı_ma_dı
 Marat it_ACC eat_NEG_pst.3s
 ‘Alsu knows that Marat ate the pasty, but Marat didn’t eat it.’
- (33) Elena [Ethan göbädiyä_nı aşı_dı dip] uyly, lekin
 Elena Ethan pasty_ACC eat_pst.3s C think_3s but
 Ethan a_nı aşı_ma_dı
 Ethan it_ACC eat_NEG_pst.3s
 ‘Elena thinks that Ethan ate the pasty, but Ethan didn’t eat the pasty.’

From (31) and (32) we see the same semantic relations hold between the factive predicates (*know* and *glad*) in Tatar as in English, that is, they are presupposed as part of the common ground of the conversation (again, a claim to be further clarified in Chapter 4). Therefore, a hypothesis that bases the analysis of extraction facts based on a syntactic representation of definiteness or referentiality (and deriving the presupposition therefrom) should hold for languages like English and Spanish as well as

for Tatar. The fact that syntactic phenomena do not pattern along the same lines as the semantic classes in Tatar is one important observation in this thesis and drives the hypothesis to be presented.

1.1.4. Mayangna

Mayangna is a Misumalpan language spoken in eastern Nicaragua. It is a head final language which makes little use of the types of nominalizations seen in Tatar. It thus offers an interesting contrast to Tatar from a typological perspective. For more information on Mayangna, the reader is referred to Hale (1991), Hale (1994), Benedicto and Hale (2000), and Hale and Salamanca (2002).

I will discuss predicates with an emotive factive head *alasna* ‘to be glad’, a semi-factive head *nû* ‘to know’, and an intensional head *kulnin* ‘to think/believe’. Each of these heads introduces a complement which contains a tensed CP. And what is important for the analysis which follows, the tensed CP selected as complement by emotive factive or semi-factive heads may be headed by the overt Determiner *kidi*. Such is the case as in (34) with a preverbal complement clause headed by *kidi* and in (35) with a postverbal complement clause also headed by *kidi*,⁷ both with emotive factive *alasna* ‘glad’. (36) shows the emotive factive *alasna* ‘glad’ appearing with a causal adjunct, an

⁷ Later, in §2.4.1. I will show sentences in which a postverbal clause with *alasna* ‘glad’ may not take a complement clause headed by *kidi*, the restrictions on DP complements versus causal adjuncts with *yulni* ‘because’ is poorly understood at this point, as is clausal architecture of predicates with clausal complements in general in Mayangna.

alternate derivation which should not be confused with the Source of Experience argument which appears headed by *kidi*.⁸

- (34) [Eric damai waspa dîni kas_na kidi] Eliza alasna ki
Eric yesterday fish eat_pst.3s D Eliza glad 3s

‘Eliza is glad that Eric ate the fish yesterday.’

- (35) ûba alasna yang [aiwa_na_man kidi]
very glad 1s come_pst_2s D

‘I’m very glad that you came.’

- (36) alasna yang [Eric waspa dîni kirh_wa yulni]
glad 1s Eric fish descale_3s because

‘I’m glad that (because) Eric descaled the fish.’

In (37) semi-factive *nû* ‘know’ tends to take a DP-less CP when the object appears postverbally (although see §2.4.1. for a counterexample), while a CP complement headed by the definite Determiner *kidi* is more common when the clause appears preverbally.

⁸ Although the adjunct construction seems much more productive in Mayangna than in English and Spanish, I will ignore the causal adjunct construction in my analysis for the most part, only drawing attention to situations in which only one or the other seems to be acceptable, see §2.4.1. for one example.

- (37) Eliza nû ki [Eric damai waspa dîni kas_na]
 Eliza know 3s Eric yesterday fish eat_pst.3s
 ‘Eliza knows that Eric ate the fish yesterday.’
- (38) [Eric damai waspa dîni kas_na kidi] Eliza nû ki
 Eric yesterday fish eat_pst.3s D Eliza know 3s
 ‘Eliza knows that Eric ate the fish yesterday.’

In (39) we see a tensed CP complement (with a null C^0) with intensional *kulnin* ‘to think’, no definite Determiner *kidi* may take the CP as complement, Merging with the intensional head. In other words, the clausal structure DP-over-CP is only possible as complement to a factive head.

- (39) Elena kul_wi [Eric ting kau waspa dîni kas_na]
 Elena think_3s Eric hand in fish eat_pst.3s
 ‘Elena thinks that Eric ate the fish with his hands.’

Semantically, both the emotive factive *alasna* ‘to be glad’ and the semi-factive *nû* ‘know’ presuppose the truth value of their complement clause as part of the conversational common ground, since when the proposition in the embedded clause is contradicted, the result is an infelicitous utterance, as in (40) and (41) respectively. When the event in the complement clause of intensional *kulnin* ‘to think’ is

contradicted, the result is felicitous, as in (42). Again, in Chapter 4 I will discuss the different types of presupposition between emotive factive and semi-factive predicates.

- (40) #[Elena Bilwi yak k_ai_na kidi] Eliza alasna ki, kaunah
 Elena Bilwi to 3s_come_pst D Eliza glad 3s but
 Elena k_aiw_as da_na.
 Elena 3s_come_NEG quit_pst.3s
 ‘Eliza is glad that Elena came to Bilwi, but Elena didn’t come.’

- (41) #[Elena Bilwi yak k_ai_na kidi] Eliza nû ki, kaunah
 Elena Bilwi to 3s_come_pst D Eliza know 3s but
 Elena k_aiw_as da_na.
 Elena 3s_come_NEG quit_pst.3s
 ‘Eliza knows that Elena came to Bilwi, but Elena didn’t come.’

- (42) Eliza kul_wi Elena Bilwi yak k_ai_na, kaunah Elena
 Eliza think_3s Elena Bilwi to 3s_come_pst but Elena
 k_aiw_as da_na.
 3s_come_NEG quit_pst.3s
 ‘Eliza thinks that Elena came to Bilwi, but Elena didn’t come.’

In Mayangna, as in Spanish, English, and Tatar, we see that factive predicates presuppose the truth of their complement clause as a part of the common ground of the conversation. The intensional *kulnin* ‘to think’, however, does not. There are also

distributional differences between the syntactic categories that these semantic types of verbs may select as complement. Factive predicates like *nû* ‘know’ and *alasna* ‘glad’ may select DPs, while intensional *kulnin* ‘to think’ may not.

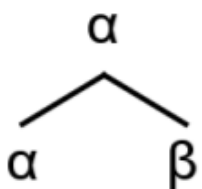
1.2. Hypothesis

Recent analyses of ‘factive’ complement clauses (Basse 2008; de Cuba 2007; Haegeman and Ürögdi 2010; Krapova 2009; Melvold 1991; Ormazabal 2005) claim that the syntactic mechanism that derives referentiality or definiteness derives extraction facts and other syntactic behaviors as epiphenomena. Arguing against this claim, I propose that different complement types show unique syntactic behavior depending only on the specific syntactic category of their complement and the properties of this category in that language. Using data from Tatar, I argue that a syntactic account of referentiality or definiteness does not minimally explain the behavior of different semantic classes of predicates cross-linguistically (contra de Cuba 2007; Haegeman and Ürögdi 2010; Melvold 1991; Ormazabal 2005,). Syntactic operations (such as wh-extraction out of the embedded constituent) which differentiate the semantically factive classes of heads (e.g. *know* or *glad*) from semantically intensional heads (e.g. *think* or *believe*) in languages like English and Spanish do not do so for languages like Tatar or Mayangna. Since factive complements in all four languages are equally definite, referential, or presupposed, these recent proposals for deriving wh-extraction facts via a syntactic account of definiteness, referentiality, or presupposition would predict similar behavior for factive clauses cross-linguistically. Since this is not the case, I propose that a

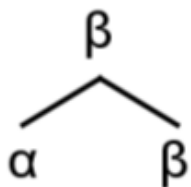
more fundamental syntactic mechanism, based purely on the syntactic category of the complement clause and the properties of that syntactic category in each language must be responsible for the syntactic phenomena associated with different types of complements.

My proposal is based on the labeling algorithm discussed in Chomsky (2008), which defines syntactic behavior of each derivation depending on which syntactic elements are present in the numeration. The labeling algorithm states that when two Syntactic Objects Merge, one of them must project as label with its category features, driving further syntactic operations. For example, if the Syntactic Object α Merges with the Syntactic Object β , then either (43a) or (43b) are possible labeling options for the new Syntactic Object. This label will drive all subsequent syntactic operations.

- (43) a. α and her syntactic category features project as label



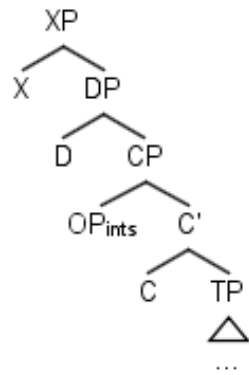
- b. β and her syntactic category features project as label



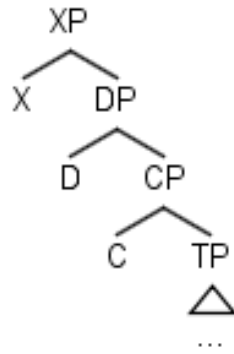
The syntax itself does not determine which Syntactic Object will project: but it is the case that derivations can only converge if the proper interface requirements are met by the Syntactic Object at each step in the derivation.

I propose, following Kiparsky and Kiparsky (1970) and Krapova (2009), that a D label is required for convergence for complements of emotive factive heads (*regret* or *glad*), and semi-factive (*know* or *remember*) and as in (44a) and (44b) below. Following de Cuba (2007), I support the claim that an intensional Operator label (hereafter OP_{ints}) is required for convergence for intensional predicates, as in (44c) below. In terms of syntactic behavior, then, the appropriate distinction is between predicates that take a D label complement (44a), (44b) versus those that take an OP_{ints} label complements (44c), as will be discussed in Chapter 3. The differences between semi-factive heads (e.g. *know*) and emotive factive heads (e.g. *glad*) can be explained based on the presence of an OP_{ints} in the derivation of the emotive factive, as discussed in Chapter 4. The structures shown in (44a) and (44b) show a D label clausal complements to factive heads. In later chapters I will discuss other derivations with other types of DPs as complements to factives.

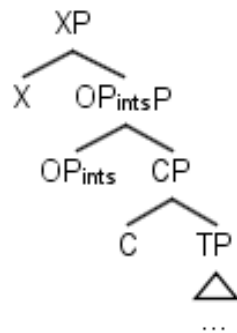
- (44) a. D-label complement to an emotive factive head (e.g. *glad*)



- b. D-label clausal complement to a semi-factive head (e.g. *know*)



- c. OP_{ints}-label complement to a propositional/intensional head (e.g. *think*)



As described above, the labeling algorithm determines the syntactic category of the new Syntactic Object (SO) formed from the Merger of two SOs and drives all further syntactic operations (Chomsky 2008). Therefore when the two SOs, D and C in (44a) and (44b) Merge, D projects with its category features, and these Syntactic Objects behave like other definite DPs in terms of extraction out of their domain as well as external distribution. This occurs without reference to concepts such as definiteness, referentiality, or presupposition of the complement. These semantic and pragmatic concepts are ‘read off’ the syntactic derivation, and thus are not responsible for other syntactic phenomena. The selectional restrictions of the selecting head, both syntactic and semantic, determine which derivations are able to converge with which lexical heads. Therefore it is not necessarily the case that a null DP is present over every CP in the derivation of a factive predicate. Tatar and Mayangna show complements headed by overt DPs, and §3.1. discusses free relative complements in English in which no null DP need be present in the numeration in order for the derivation to converge.

I will provide three types of evidence to support this hypothesis: 1) morphological evidence from Tatar and Mayangna, 2) distributional evidence from all four languages, and 3) evidence based on extraction facts and the properties of the definite DP in each of the four languages.

1.3. Methodology

The data presented in this thesis was gathered with native speakers of each language using contextualized elicitation and grammaticality judgments. The Spanish

data and judgments come primarily from speakers from the Iberian Peninsula. Tatar data and judgment come from a Tatar speaker from Kazan, Tatarstan, Russia. Mayangna data and judgment are from a speaker of Panamahka, the dialect of Mayangna spoken near Bilwi, Nicaragua.

1.4. Roadmap

The rest of this thesis will be organized as follows:

First, in Chapter 2, I will defend the claim from §1.2. that the constituent embedded under emotive factive heads are in fact complements to the lexical head (contra Hartman 2012), being the Source of Experience argument. Following Viñas i de Puig (2009) I will show using quantifier binding that the Experiencer argument is merged as an external argument, in a position which c-commands the Source of Experience. Next, using extraction facts from each of the four languages I will show that the Source of Experience does not pattern with adjuncts in terms of object extraction. This means that factive predicate's resistance to extraction cannot be explained based on the Condition on Extraction Domain and adjuncthood of the constituent (Cattell 1976; Huang 1982), and a syntactic explanation must be found in the structure of the complement. I claim that this element is a definite DP layer.

Next, in Chapter 3, I will discuss the predictions made by proposing a complement with a D label for factive heads. Complement clauses of 'factive' heads (e.g. *know* or *glad*) should behave in the same manner as other definite or referential D-labeled structures in each of the four languages. Distribution and extraction facts will be

discussed based on the structures in (44). I will claim that the relevant difference between languages in terms of extraction from factive complements as well as extraction from complex DPs lies in the nature of the [Spec, DP] position. Specifically, I will propose that [Spec, DP] in Tatar can act as an escape hatch for wh-elements of any kind (see Szabolsci 1994, Alexiadou 2001), while in English and Spanish it does not act as an escape hatch. Mayangna presents a more complicated picture that will be discussed in turn.

In Chapter 4 I will develop the beginnings of an analysis for the syntactic and semantic differences between complements to emotive factive (e.g. *glad*) and semi-factive (e.g. *know*) heads. The analysis in this chapter will focus on the OP_{ints} that I argue is Merged into the derivation of an emotive factive head (e.g. *glad*) that is absent in the derivation of semi-factive heads (e.g. *know*)⁹. I will show that in English and Spanish, these two classes of predicates display different semantic and morphological behavior in addition to displaying unique selectional restrictions on DP complements, all of this indicating that they have different structures. The OP_{ints} in emotive factives binds the event argument in the embedded clause and gives the hearer access to the possible worlds of the matrix Experiencer argument which are compatible with the attitude expressed by the matrix predicate. I will use the situation semantics of Barwise and Perry (1983) and Kratzer (1989) to offer a possible analysis. This chapter will merely be a

⁹ While I do not include any sort of intensional Operator in the derivation of semi-factive heads, it may in fact be the case that such an Operator is present, but with very different properties than the one in the derivation of emotive factives.

first approach at the mapping of the syntax into the semantics; the details will be reserved for future work.

Chapter 5 will contain a summary of the claims in this thesis, as well as some directions for future research.

In the end, I hope to prove that a purely syntactic explanation based on Bare Phrase Structure (BPS) and the labeling algorithm (Chomsky 2008) is sufficient to account for the syntactic differences between complements to lexical heads of different semantic classes cross-linguistically. The interaction between the labeling algorithm on the Syntactic Objects in the derivation and the selectional restrictions, both syntactic and semantic, of the selecting lexical head in the derivation provide such an explanation.

CHAPTER 2. BASIC STRUCTURE OF EMOTIVE FACTIVE PREDICATES

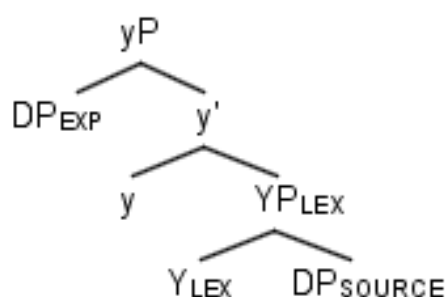
2.0 Introduction

In this chapter I will describe the basic structure of emotive factive predicates in Spanish, English, Tatar, and Mayangna. I will follow Viñas i de Puig (2009) in claiming that the Experiencer arguments are introduced via a functional projection, and therefore c-commands the other embedded constituent of emotive factive predicates, which is Source of Experience argument. I will show this with quantifier binding. I will then briefly discuss object extraction facts in Spanish, English, Tatar, and Mayangna which show that the Source of Experience clauses do not pattern with adjuncts in each language, indicating in turn that they are complements to the emotive factive head (e.g. *glad*). The extraction facts to be discussed further in Chapter 3, then, cannot be due to the adjuncthood of the embedded clause (Cattell 1976, Huang 1982, amongst others). Since the Source of Experience arguments are complements, it follows that they are subject to selectional restrictions, both syntactic (discussed in Chapter 3) and semantic (discussed in Chapter 4).

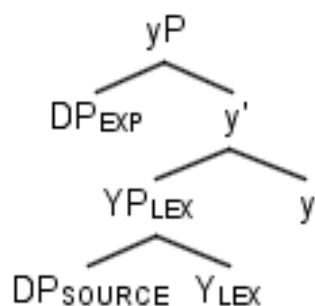
The basic structure of the emotive factive predicates under discussion will be shown to be as in (1), where Y is a lexical head (V/A) and y is a functional element (*v/a*) responsible for introducing an external argument (see Marantz 1997, Bennis 2004 for

more on *a*). (1a) shows the structure for a head initial language (such as English or Spanish) and (1b) shows the structure for a head final language (such as Tatar or Mayangna). I will omit details in the tree structure that are not relevant for the current analysis.

- (1) a. Basic structure for factive predicates: head-initial languages



- b. Basic structure for emotive factive predicates: head-final language



2.1 Spanish

In this section, I will discuss the basic structure of emotive factive predicates (*alegrarse* 'to be glad') in Spanish, showing that they have a configuration similar to the

canonical attitude predicates like the transitive intensional predicates (e.g. *creer* ‘to believe/think’) or semi-factive transitive predicates (e.g. *saber* ‘to know’).

Again, I am proposing that clauses embedded under emotive factive heads are complements to the lexical head, similar to the complementation structure of the transitive attitude predicates, intensional *creer* ‘to think’ and semi-factive *saber* ‘to know’ (and following the basic structure for psychological predicates in Viñas i de Puig 2009). Furthermore, the Experiencer argument is the external argument, in a position such that operators in the Experiencer position c-command variables inside the Source of Experience argument, just as in the cases of the canonical transitive attitude predicates *creer* ‘to think’ and *saber* ‘to know’. I will also show here that, contrary to *creer* ‘to think’, there is a structural element in the CP layer of factive complements that prevents extraction. I propose that this element is a D projection above the CP, a claim which will be defended in Chapter 3. In the rest of this chapter, I will use Quantifier binding to show that the Experiencer c-commands the domain of the complement (§2.1.1.), and I will show that extraction out of the complement of *alegrarse* ‘to be glad’ does not pattern like extraction out of adjuncts (§2.1.2.). I will address the diminished grammaticality as the result of the extra layer of structure (DP) in Chapter 3.

2.1.1. Quantifier Binding

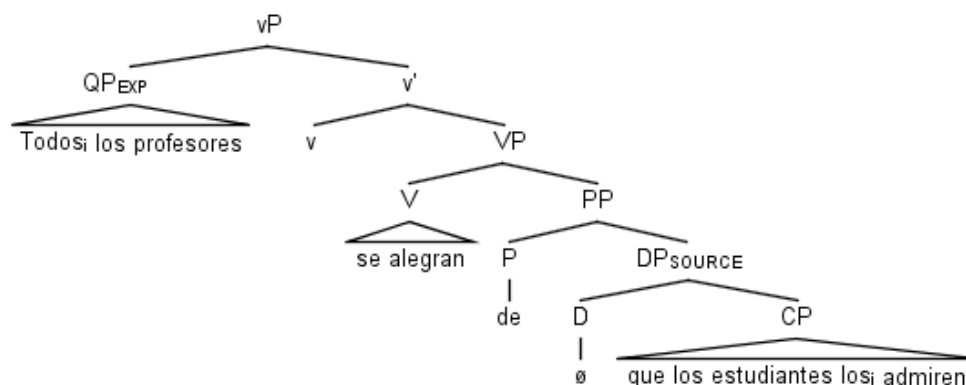
The premise of this diagnostic is that operators can only bind pronouns whose chains they c-command (Langacker 1966, Reinhart 1976, Reinhart 1983, Heim 1998). If an operator (such as a Quantifier) in the Experiencer position can bind variables in the

embedded clause, then the embedded clause is in the c-command domain of that matrix Experiencer. This would indicate that the embedded Source of Experience argument appearing with emotive factive predicates such as *alegrarse* ‘glad’ is within the c-command domain of the Experiencer argument. This is in fact the case, as in (2), which is in turn represented structurally in (3).

- (2) Todos_i los profesores se alegran de [que los estudiantes
all D.pl professors SE be_glad.3p P C D.pl students
los_i admiren].
CL.3pm admire_subj.3p

‘All the professors are glad that the students admire them.’

- (3) Basic structure of the Spanish emotive factive predicate in (2):



As we can see in (2), the Quantifier *todos* ‘all’ in the Experiencer position binds the operator *los* ‘them’ in the Source of Experience argument. This configuration is the same

as with the canonical transitive attitude predicates *creer* ‘think’ in (4) and *saber* ‘know’ in (5):

- (4) Todos_i los profesores creen [que sus estudiantes los_i
all D.pl professors thinks.3p C their students them
admiran].
admire_3p
‘All the professors think the students admire them.’

- (5) Todos_i los profesores saben [que sus estudiantes los_i
all D.pl professors know.3p C their students them
admiran].
admire_3p
‘All the professors know that the students admire them.’

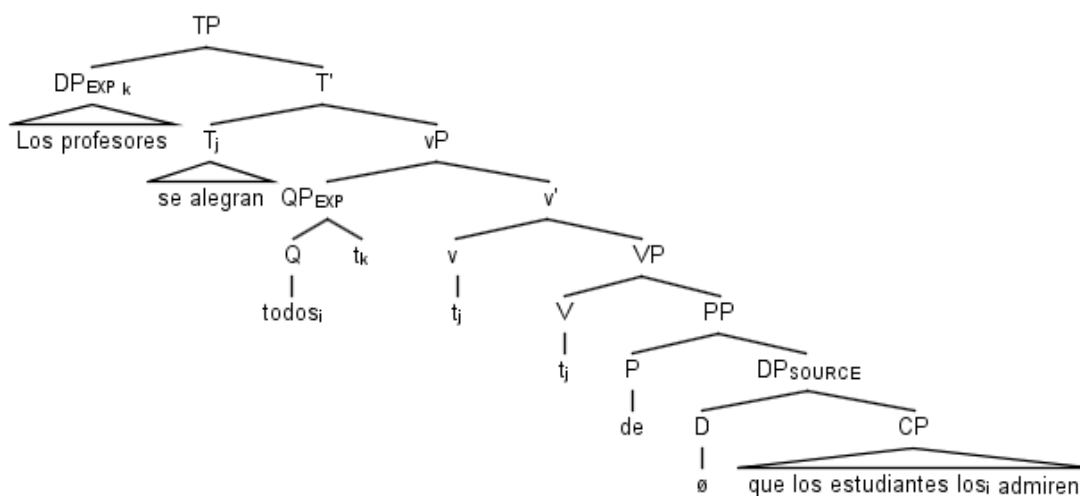
In fact, even when the universal Quantifier is left in-situ (as in the case of the floated Quantifier in (6)), the Source of Experience argument is still within its c-command domain, contra the analysis for emotive factives in Hartman (2012)¹⁰:

¹⁰ Hartman (2012) claims that the Experiencer is complement to the lexical head *glad*, while the complement clause is actually the external argument. I argue for the opposite configuration, as supported by the c-command facts here.

(6) Los profesores se alegran todos_i de [que sus estudiantes
 D.pl professors SE be_glad.3p all P C their students
 los_i admiren].

them admire_subj.3p

‘The professors are all glad that the students admire them.’



2.1.2. Object Extraction

As Ross (1967) pointed out, certain domains constitute islands for extraction.

Complements tend not to constitute such domains, and extraction out of complements is generally possible, as in (7) below with *creer* ‘to think’. The premise of this diagnostic is that in Spanish, extraction is only possible from a complement domain, but not from an adjunct (see (8) below), as elucidated in Cattell (1976).¹¹

¹¹ In the absence of special clitics such as Catalan *ne* which differentiate prepositional arguments from adjuncts, this test is somewhat roundabout, but does show that

(7) ¿Qué_i crees [que tu hijo ha comido t_i]?

what think_2s C your son AUX.3s eat_PART t

‘What do you think your son ate?’

(8) *¿Qué_i te fuiste [cuando tu amigo dijo t_i]?

what SE go_pst.2s when your friend say_pst.3s t

‘What did you leave when your friend said?’

However, not all complement domains show full grammaticality with extraction out of them, as also shown in Ross (1967). But, such complement extraction is more acceptable than the outright ungrammaticality of extraction out of an adjunct in (8). (9) shows the extraction of an object from a clausal complement to *alegrarse* ‘to be glad’, and (10) shows the extraction of an object from a clausal complement to *saber* ‘to know’.¹²

extraction from emotive factive complements does not pattern with extraction from adjuncts.

¹² I also include as (i) an example from Bosque (1994) of object extraction from a wh-island as the [+Q] complement of semi-factive *no saber* ‘to not know’. The situation in (i) differs from that of (10) in that the embedded clause under *saber* ‘know’ in (10) is [-Q], or declarative, and does not have an occupied [Spec, CP]. The embedded clause under *no saber* ‘to not know’ in (i) is [+Q] and has a filled [Spec, CP]. In this thesis I am more concerned with the extraction patterns of [-Q] embedded clauses under factive heads, and so I will put sentences like (i) aside.

(i) ¿Qué paquete_i no sabes cuánto_j pesa t_i t_j?

what package NEG know_2s how.much weigh_3s t t

‘Which package don’t you know how much it weighs?’

(from Bosque 1994)

- (9) ?*¿Qué_i te alegras de [que tu hijo haya comido t_i]?
 what SE be.glad_2s P C your son AUX_subj.3s eat_PART t

‘What are you glad that your son ate?’

- (10) ?*¿Qué_i sabes [que tu hijo ha comido t_i]?
 what know_2s C your son AUX_3s eat_PART t

‘What do you know your son ate?’

Object extraction from the complement domain of the intensional Verb *creer* ‘think’ in (7) is perfectly acceptable. Object extraction from the complement domain of semi-factive *saber* ‘know’, which is a canonical transitive attitude predicate, in (10) and from the Source of Experience of emotive factive *alegrarse* ‘to be glad’ in (9) are not fully grammatical, but are more acceptable than an object extraction out of a tensed adjunct clause in (8). Since extraction from the clause embedded under *alegrarse* ‘to be glad’ patterns with extraction from the complement to *saber* ‘to know’, and not from the adjunct in (8), we may conclude that the clause embedded under *alegrarse* ‘to be glad’ is not an adjunct.

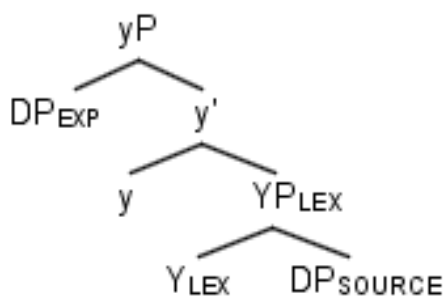
I take the fact that object extraction from the Source of Experience argument is (very) marginally grammatical as in (9), but not ungrammatical as in extraction from an adjunct in (8), to indicate that the structural representation for embedded constituents under emotive factive heads (*alegrarse* ‘to be glad’) to be complements to the lexical head, similar to the known configuration of intensional heads (e.g. *creer* ‘to believe/think’) and semi-factive heads (e.g. *saber* ‘to know’). I will discuss the

problematic aspects of extraction from semi- and emotive factive complements in more detail in Chapter 3.

2.1.3. Conclusion

In this section I have shown that the structural ordering of the arguments (Experiencer over Source) in the predication structure in (1a) is accurate for emotive factive predicates (*alegrarse* ‘to be glad’) in Spanish. This configuration is similar to the uncontroversial configuration for canonical transitive intensional (*creer* ‘to think’) and semi-factive (*saber* ‘to know’) predicates. I follow Viñas i de Puig (2009) in saying that external arguments of all types, including Experiencers, are introduced via a functional projection, *v* (or *α*, as in Marantz 1997, Bennis 2004). This structure is repeated here as (12):

(12) Basic structure for Spanish emotive factive predicates



2.2. English

In this section, I will discuss the structure of emotive factive predicates (e.g. *glad*) in English. I will also include discussion of the canonically transitive attitude predicates, the intensional predicate *think* and semi-factive *know*, in order to establish the accurate structure for the emotive factive *glad*.

As in Spanish, I will show that the clause embedded under emotive factive heads are in fact complements to the lexical head, being the Source of Experience argument. Using Quantifier binding, I will show, following Viñas i de Puig (2009), that the Experiencer is an external argument, and that operators in the position of the Experiencer c-command the domain of the Source of Experience argument. Furthermore, I will show with object extraction facts that extraction from the Source of Experience of *glad* does not pattern with extractions from adjuncts, and that there is an element in the structure of the emotive factive predicates (as well as semi-factive ones) that prevent extraction. I propose that this element is a D projection which Merges with CP and then projects, becoming a DP and Merging with the emotive factive lexical head. This claim is discussed further in Chapter 3.

2.2.1. Quantifier Binding

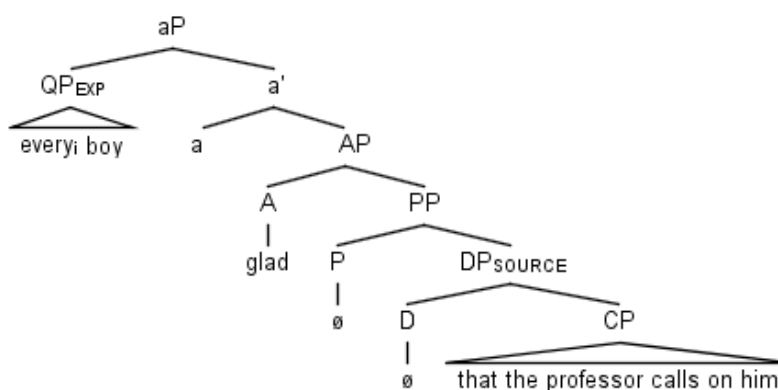
Again, the premise of this test is that in order for a variable to be bound by a quantifier, the quantifier (or operator) must c-command the variable's chain (Langacker 1966, Reinhart 1976, Reinhart 1983). If an operator in the position of the Experiencer argument in the matrix clause can bind a variable in the Source of Experience argument,

then the embedded constituent is within the c-command domain of the matrix

Experiencer DP. This is shown to be the case in (13), represented in a tree in (14).

(13) Every_i boy is glad that the professor calls on him_i.

(14) Basic structure of the emotive factive predicate in (13):¹³



As we see in (13), the universal Quantifier *every* may bind the variable *him* in the Source of Experience clause. This configuration also what we observe with the canonical transitive attitude predicates, for example the intensional *think* in (15), and the semi-factive *know* (in 16).

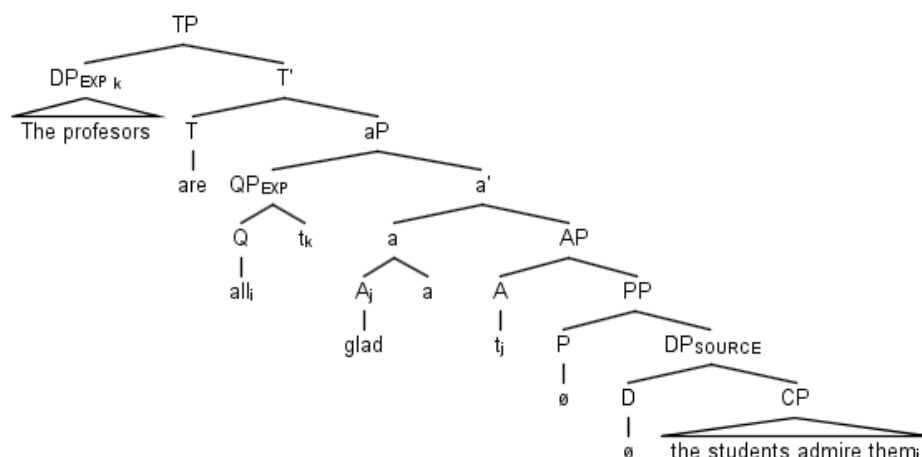
(15) Every_i boy thinks the professor called on him_i.

(16) Every_i boy knows that the professor called on him_i.

¹³ Since *glad* is unable to assign Accusative case, I assume that a null Prepositional element must also be present in the derivation in order for the DP Source of Experience argument to receive Case. In fact, in (9) above we see that in Spanish an overt Preposition is present even when introducing an (apparent) CP complement. This claim will be elaborated further in Chapter 3.

In fact, as in Spanish, when the Quantifier is left in-situ (the floating Quantifier construction), the Quantifier still binds the variable inside the Source of Experience. This means that in its base generated position, the Experience c-commands the Source of Experience argument, as shown in the (simplified) tree in (17) and contra the analysis of emotive factive predicates in Hartman (2012).

(17) The professors are all_i glad the students admire them_i.



2.2.2. Object Extraction

Again, as pointed out in Ross (1967), some domains do not allow for elements to be extracted out of them, in other words, they are islands to extraction. As Cattell (1976) showed (following the analysis laid out in Ross 1967), Wh-extraction is only possible out of complement domains, as in (18), but not from adjuncts, as in (19).

(18) What_i do you think [your son ate t_i]?

(19) *What_i did you leave [after your friend said t_i]?

However, as Ross (1967) also discusses, not all complements allow for elements to be extracted from them. Such is the case of the emotive factive predicate with *glad* in (20), which patterns like the canonical transitive semi-factive predicate with *know* in (21), being very marginally acceptable, rather than with the adjunct in (19), which is outright ungrammatical.

(20) ?*What_i are you glad [(that) your son ate t_i]?

(21) ?*What_i do you know [(that) your son ate t_i]?

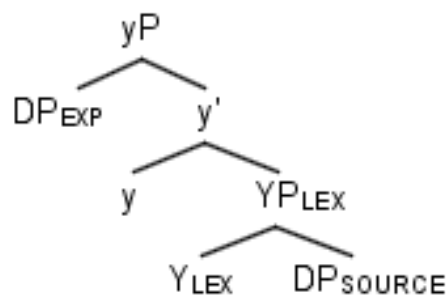
From this data we may conclude that object extraction from the emotive factive predicate does not pattern with adjuncts. Instead, it behaves like the uncontroversial complements to semi-factive predicates, as in (21). I conclude then that the clause embedded under the emotive factive predicates is in fact a complement to the lexical head, similar to the configuration of the canonical transitive attitude predicates *think* and *know*. The marginal ungrammaticality of object extraction from the complement domains of semi- and emotive factive predicates will be further discussed in Chapter 3.

2.2.3. Conclusions

In this section I have used Quantifier binding to show that the Experiencer argument c-commands the domain of the Source of Experience argument in emotive factive

predicates. I have also used object extraction facts to show that the Source of Experience argument is a complement to the lexical head, similar to the configuration of the canonical transitive attitude predicates *think* and *know*. The basic structure for the emotive factive predicate in English is repeated in (22).

(22) Basic structure for English emotive factive predicates



2.3. Tatar

As in the previous sections for Spanish and English, here I will show that the nominal Source of Experience clauses with emotive factive predicates in Tatar are complements to the lexical heads, similar to the canonical attitude predicates like *think* and *know*. I will further show that the Experiencer argument with emotive factive predicates is the external argument, such that operators which occupy that position c-command variables inside the Source of Experience argument. Furthermore, in Tatar, the morphology of the embedded constituent shows that there is a structural difference in the complements of factive complements, but contrary to English and Spanish, this

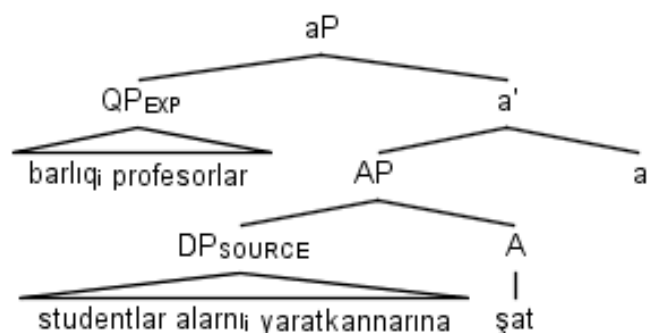
structural difference does not prevent extraction from factive complements. This structural difference is observable in the morphology, since the clauses embedded under factive heads (e.g. *know* and *glad*) are DPs. I will use extraction facts and case marking in Tatar to establish further that the nominal clause embedded under emotive factive heads are in fact complements to the lexical head.

2.3.1. Quantifier Binding

The premise of this test is identical to the premise for Quantifier Binding in English and Spanish, that in order for a variable to be bound by a Quantifier, this variable must be in the c-command domain of that Quantifier (Langacker 1966, Reinhart 1976, Reinhart 1983, Heim 1998). If an operator occupying the Experiencer position of an emotive factive predicate with *şat* 'glad' can bind a variable in the Source of Experience nominal clause, that would indicate that the Experiencer argument c-commands the Source of Experience. This is in fact what we see, as in (23), represented structurally in (24).

- (23) Barlıq_i profesor_lar [student_lar alar_nı_i yarat_kan_nar_ı]_na şat.
 all professor_pl student_pl them_ACC like_GAN_pl_poss3p_DAT glad
 'All the professors are glad that the students like them.'

(24) Basic structure for the Tatar emotive factive predicate in (23)



As we see in (23), the universal quantifier *barlıq* ‘all’ in the Experiencer position may bind the variable *alarnı* ‘them’ inside the Source of Experience argument. This is also what is observed with the canonical attitude predicates, for example with intensional *uyl-* ‘think’ in (25) and semi-factive *bel-* ‘know’ in (26) with a tensed CP complement and in (27) with a nominal clause complement.

(25) Barlıq_i profesor_lar [student_lar alar_nı_i yarat_a dip] uyl_ıy.

all professor_pl student_pl them_ACC like_3p C think_3p

‘All the professors think the students like them.’

(26) Barlıq_i profesor_lar [student_lar alar_nı_i yarat_a dip] bel_ä.

all professor_pl student_pl them_ACC like_3p C know_3p

‘All the professors know that the students like them.’

- (27) Barlıq_i profesor_lar [student_lar alar_nı_i yarat_kan_nar_ı]_n
 all professor_pl student_pl them_ACC like_GAN_pl_poss3p_ACC
 bel_ä.
 know_3p
 ‘All the professors know that the students like them.’

Pronouns in the embedded clause are able to be bound by operators in the matrix clause. This indicates that all clauses embedded under *şat* ‘be glad’, *bel-* ‘know’, and *uyl-* ‘think/believe’ are all within the c-command domains of the Experiencer argument introduced by the matrix V/A.

2.3.2. Object Extraction

As discussed in previous sections, Ross (1967) made the observation that some domains are islands for extraction, while others are not. The premise of this diagnostic is that extraction is only possible from complement domains, as in (28) with *uyl-* ‘think’, but not from adjuncts, as in (29) (see also Cattell 1976).¹⁴

¹⁴ The fact that a *wh*-element in an adjunct cannot take matrix scope indicates that in Tatar there is syntactic movement of some sort. Although I will not address the exact nature of *wh*-in-situ in Tatar here, the reader is directed to Kim (1989), Cole and Hermon (1994), Reintges, LeSourd, and Chung (2006), and Cable (2010) for more discussion on the different flavors of *wh*-in-situ.

- (28) Elena [Ethan närsä aşı_dı dip] uyly?
 Elena Ethan what eat_pst.3s C think_3s
 ‘What does Elena think that Ethan ate?’

- (29) *Sin bu kiçe_nı yarata_sıñ [çönki kem biy_i]?
 you this party_ACC like_2s because who dance_3s
 ‘Who do you like this party because is dancing?’

If object extraction is possible from the constituents embedded under *şat* ‘glad’, then we may tentatively conclude that the constituent is a complement, since it will pattern with canonical complement clauses as in (28). We see in (30) that object extraction from *şat* ‘glad’ is grammatical, patterning with other complement clauses.

- (30) Elena [Ethan_nıñ närsä aşı_gan_ı]_na şat?
 Elena Ethan_GEN what eat_GAN_poss3s_DAT glad
 ‘What is Elena glad that Ethan ate?’

Since argument extraction is grammatical from the Source of Experience argument with *şat* ‘glad’, we conclude that the Source of Experience is in fact a complement to the lexical head. Furthermore, given the full grammaticality of object extraction from emotive factive complements and semi-factive ones, as in (31) below, we have a clear contrast between Tatar and languages like English or Spanish, which do not easily allow for extractions from factive complements.

- (31) Sin [Marat_niñ nārsä aṣa_gan_ı]_n belä_siñ?
 you Marat_GEN what eat_GAN_poss3s_ACC know_2s
 ‘What do you know that Marat ate?’

Similarly, object extraction out of a causal adjunct with a –GAN participle with *ṣat* ‘glad’ is also of reduced grammaticality¹⁵, as in (32). Instead, sentences of the structure of (30), with both nominal personal possessive agreement and the Dative morpheme, are preferred and are regularly produced in their place by way of correction.

- (32) ??Elena [Ethan nārsä aṣa_gan]_ga ṣat.
 Elena Ethan what eat_GAN_DAT glad
 ‘What is Elena glad because Ethan ate?’

2.3.3. Case marking

One final piece of evidence for the complementhood of participial nominals embedded under emotive factive *ṣat* ‘glad’ in Tatar comes from case marking facts. With the emotive factive head *ṣat* ‘glad’, a –GAN participle with both the Dative morpheme and personal possessive suffixes may appear only on a complement to V/A, as evident with Accusative Case morphology on the complement to *bel-* ‘know’. Both the Dative morpheme and the possessive suffix are not possible when the constituent is

¹⁵ In other contexts, extraction from a –GAN-DAT causal adjunct seems more acceptable, a complication that I acknowledge but will not pursue further here.

not a complement to a lexical Verb or Adjective. (33) shows the personal possessive suffix and Dative morpheme in complement position; (34) shows the ungrammaticality of the possessive suffix and Dative morpheme in adjunct position; and (35) shows that the –GAN participle with only the Dative morpheme and no possessive suffix is grammatical as an adjunct.

- (33) Min [sin_ıñ biya_gän_ıñ]_ä şat.
 I you_GEN dance_GAN_poss2s_DAT glad
 ‘I’m glad you danced/dance’
- (34) *Min göbädiyä_nı [Alsu_nıñ peşer_gän_ı]_nä aşı_dı_m.
 I pasty_ACC Alsu_GEN make_GAN_poss3s_DAT eat_pst_1s
 ‘I ate the pasty because Alsu made it.’
- (35) Min göbädiyä_nı [Alsu peşer_gän]_gä aşı_dı_m.
 I pasty_ACC Alsu_NOM make_GAN_DAT eat_past_1s
 ‘I ate the pasty because Alsu made it.’

This pattern may be compared with the case of *bel-* ‘know’, a canonical transitive attitude predicate. The Accusative/Definite morpheme *-n(i)* appears when the nominalized verb appears as complement to a Verb which assigns Accusative case, as in (36), while no Accusative/Definite morpheme appears on the –GAN participle when it is introduced by a postposition, as in (37):

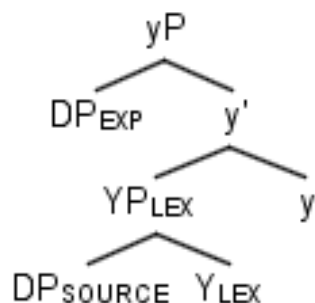
- (36) Äti [Marat_niñ göbädiyä_nı aşı_gan_ı]_n bel_ä.
 dad Marat_GEN pasty_ACC eat_GAN_poss3s_ACC know_3s
 ‘Dad knows that Marat ate the pasty.’

- (37) Äti Marat_niñ biya_gän_ı turında bel_ä.
 dad Marat_GEN dance_GAN_poss3s P.about know_3s
 ‘Dad knows about Marat’s dancing.’

2.3.4. Conclusions

Quantifier binding facts show that the Experiencer argument is in a position that c-commands the Source of Experience argument. I claim, following Viñas i de Puig (2009), that the Experiencer is introduced by a functional projection, while the Source of Experience is the complement of the lexical head. Object Extraction and the assignment of both the personal possessive suffix and the Dative morpheme indicate that the Source of Experience argument is a complement to the lexical head *şat* ‘glad’. Therefore, the correct structural representation for relationship of the constituents embedded under *şat* ‘be glad’ is complementhood to the lexical head, repeated here as (38). It is worth noting here that the difference between the structure of Tatar and the structure for English and Spanish in the previous sections is simply that Tatar is a head final language, while English and Spanish are head initial. The structural relationship between the Source of Experience argument and the lexical in all three cases is identical: it is a relationship of complementhood.

(38) Basic structure for Tatar emotive factive predicates



2.4. Mayangna

As in the previous sections for Spanish, English, and Tatar, here I will provide evidence for the claim that the Source of Experience clause is a complement to the lexical head in Mayangna (or rather that it does not behave like an adjunct). A common theme for Mayangna throughout this work will be that this language constantly raises more questions than can be answered at this point. However, Mayangna does provide important evidence for the main hypothesis of this work in its overt morphology; complements to factive heads are morphologically DPs, while complements to intensional heads are not. This will be discussed more fully in Chapter 3.

In the following section I will discuss some difficulties in determining whether the Experiencer argument c-commands variables inside the Source of Experience constituent. Furthermore, in Mayangna, the morphology of the embedded constituent shows that there is a structural difference in the complements of factive complements, although extraction is impossible from both factive and intensional complements,

contrary to Spanish and English. Morphologically the clauses embedded under factive heads may be DPs, headed by an overt definite Determiner.

2.4.1. Quantifier Binding

The premise for this test is that in order for a Quantifier to bind a variable, the Quantifier must c-command the chain of the variable (Langacker 1966, Reinhart 1976, Reinhart 1983). Therefore, if an operator in the Experiencer position binds variables in the Source of Experience argument, then we can conclude that the Experiencer c-commands the Source of Experience argument's domain. With respect to Quantifier binding, the Mayangna facts are somewhat more complicated than the other three languages here. First of all, in this context a postverbal D-headed complement clause to *alasna* 'glad' is ungrammatical, as in (39)¹⁶; rather, the causal adjunct *yulni* is produced in (40). In (40), the universal Quantifier *bitik* 'all' does in fact c-command the variable *witingna* 'them' in the embedded clause. However, since it is the causal adjunct, this does not necessarily help our case here. What it does do is serve to show that the Experiencer argument is in a position where it may c-command into a VP adjunct, indicating that it is indeed in [Spec, aP], as in the emotive factive predicates in Spanish, English, and Tatar. If the Source of Experience argument appears preverbally, it may be

¹⁶ Cf. to (i), which is grammatical:

(i) ũba alasna yang [aiwa_na_man kidi]
 very glad 1s come_pst_2s D
 'I'm very glad that you came.'

The reasons for this difference are unclear, and are left for future research.

grammatically headed by the Determiner *kidi*, however, the universal Quantifier in the Experiencer position does not c-command the variable in the Source of Experience argument, as is shown in (41).

- (39) *Kul sumalyang bitik_i alasna ki [kulkayang balna kidi
 school teacher all glad 3p student pl D
 witingna_i yak dalani ta_tal_wa kidi].
 them P.to love pl_see_3p D
 ‘All the professors are glad that the students love them.’

- (40) Kul sumalyang bitik_i alasna ki [kulkayang balna kidi
 school teacher all glad 3p student pl D
 witingna_i yak dalani ta_tal_wa yulni].
 them P.to love pl_see_3p because
 ‘All the professors are glad because the students love them.’

- (41) [Kulkayang balna kidi witingna_i* yak dalani ta_tal_wa kidi]
 student pl D them to love pl_see_3p D
 kul sumalyang bitik_i alasna ki.
 school teacher all glad 3p
 ‘All the professors are glad that the students love them.’

On the other hand, with the canonical transitive attitude predicates, semi-factive *nû* ‘know’ in (42) and intensional *kulnin* ‘to think’ in (43), the universal Quantifier *bitik* ‘all’ does c-command the variable *witingna* ‘them’ in the embedded clause.

- (42) Kul sumalyang bitik_i nû ki [kulkayang balna kidi
 school teacher all know 3p student pl D
 witing_{na_i} yak yamni ta_{tal}_wa kidi].
 them_{pl} PP.to well pl_{see}_3p D
 ‘All the professors know that the students love them.’
- (43) Kul sumalyang bitik_i ku_kul_wi [kulkayang balna kidi
 school teacher all pl_{believe}_3p student pl D
 witing_{na_i} yak yamni ta_{tal}_wi].
 them_{pl} P.to well pl_{see}_3p
 ‘All the professors think that the students love them.’

One factor in the problematic aspect of these sentences is the clause-final particle *ki* in (39) and (42), and the fact that the verb *kulnin* ‘to think’ precedes rather than follows its complement clause in (43)¹⁷. Both of these facts seem to indicate that the complement clause is not in fact in the same clause as the lexical head. I will not specifically address this complication in this work, although it is something that deserves

¹⁷ Since Mayangna is a head final language, we expect the complement clause to precede the verb, as the structure in Tatar shows, since Tatar is also a head final language.

an explanation in future research. There are clearly more factors at play in clausal subordination in Mayangna than this work is able to address.

2.4.2. Object Extraction

Mayangna presents an alternate picture to the one painted above for English, Spanish, and Tatar with respect to complementhood and wh-extraction. Mayangna is a wh-in situ language which features an overt Q(uestion) particle *yah* that appears sentence finally in both wh- questions and yes/no questions. As set out in Salomon (in progress), Mayangna only allows extraction from adjunct domains. That is, only wh-elements inside an adjunct domain may take matrix scope. Therefore, the premise for the Object Extraction test in Mayangna is that if wh-objects may not take matrix scope, then the clause in which the wh-object appears is a complement to the lexical head. The inability of a wh-element in a complement clause to take matrix scope is shown in (44) with intensional *kulnin* ‘to think’, while the grammaticality of an adjunct-contained wh-element is shown in (45).

(44) *Elena kul_wi [Eric ais kas_na] yah?

Elena think_3s Eric what eat_pst.3s Q

‘What does Elena think that Eric ate?’

(45) [Eric mâmpat waspa dîni kas_na kat] Eliza alasna dai_h?

Eric when fish eat_pst.3s if Eliza glad pst_Q

‘Eliza glad if Eric ate the fish when?’ (non-echo)

If the Source of Experience is a complement to the lexical head, then we will expect that a *wh*-element inside it will not be able to take matrix scope. This is in fact the case with both *alasna* ‘glad’ in (46) and *nû* ‘know’ in (47).

(46) *[Eric damai ais kas_na kidi] Eliza alasna yah?

Eric yesterday what eat_pst.3s D Eliza glad Q

‘What is Eliza glad that Eric ate?’

(47) *[Eric ais kas_na kidi] Eliza nû yah?

Eric what eat_pst.3s D Eliza know Q

‘What does Eliza know that Eric ate?’

(47) is grammatical if it is interpreted as a yes/no question and the *wh*-word *ais* ‘what’ takes narrow scope, meaning ‘Does Eliza know what Eric ate?’. In this case, an answer to the *wh*-question may be provided, but the ‘yes’ answer confirms that *ais* does not take matrix scope. An appropriate response to (47) is in (48):

(48) A’ah, [Eric waspa dîni kas_na kidi] Eliza nû ki.

yes Eric fish eat_pst.3s D Eliza know 3s

‘Yes, Eliza knows that Eric ate fish.’

A similar response for (44) or (46) is not grammatical since of these three lexical heads, only *nû* ‘know’ may take a complement headed by a *wh*-word in a [-Q]

complement clause. More on this type of construction will be discussed in Chapters 3 and 4.

2.4.3. Conclusion

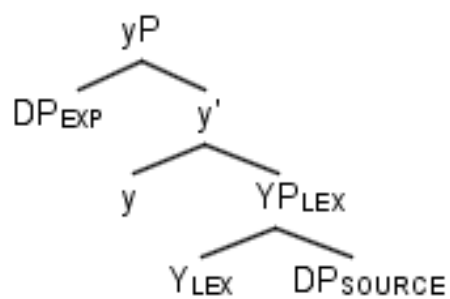
While this section raised some interesting issues concerning attitude predicates in Mayangna, we have made some important observations that support the hypothesis in this thesis. The most important point for our purposes here is that complements to the factive heads are morphologically DPs, while complements to the intensional heads are not. The Quantifier binding test revealed that we lack some basic facts about the exact structural relationship of the embedded clause with the emotive factive head. From the data from object extraction, we can conclude that the Source of Experience constituent embedded under *alasna* ‘glad’ does not pattern with adjuncts in the language, similar to the configuration of the canonical transitive attitude predicates *nû* ‘know’, and *kulnin* ‘to think’. However, since the Source of Experience does not appear in the canonical object position, it is difficult to say exactly what the basic structure of these predicates are. This is an issue in Mayangna which goes beyond emotive factive predicates, and so does not appear to be a specifically problematic detail for this thesis in particular, since we are more concerned with the internal structure of the Source of Experience argument itself. Much work is left for future research on clausal structure in Mayangna.

2.5. Conclusion

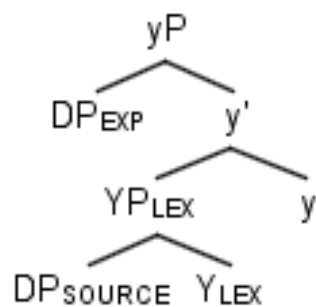
The goals of this chapter were twofold; first, we set out to establish the basic c-command relationship between the Experiencer argument and the Source of Experience argument of emotive factive predicates in Spanish, English, Tatar and Mayangna. We found, using Quantifier binding data, that the Experiencer argument, which surfaces as the sentential subject in all four languages, c-commands the Source of Experience argument¹⁸, confirming Viñas i de Puig (2009). The second goal of this chapter was to show that the Source of Experience argument is a complement to the lexical head. This was accomplished through object extraction and the fact that factive complements do not pattern with adjuncts in each language, indicating that they are in fact complements to the lexical head. This second point brings up two further issues: how to explain the fact that extraction out of the so-called ‘factive’ heads (e.g. *know* and *glad*) is restricted, and what are the selectional restrictions placed on the Source of Experience arguments by the lexical head. These are the topics of chapters 3 and 4, respectively. I repeat the basic structure of emotive factives predicates cross-linguistically as (49).

¹⁸ I acknowledge but do not pursue further the complications from the Mayangna data for now.

- (49) a. Basic structure for English/Spanish emotive factive predicates



- b. Basic structure for Tatar emotive factive predicates



CHAPTER 3: SYNTACTIC TYPE OF COMPLEMENTS TO FACTIVE HEADS

3.0. Introduction

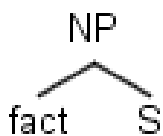
In this Chapter, I will discuss the predictions made by the hypothesis in §1.2., repeated as (2) below, that factive heads select DP complements, and that a definite D which takes CP as complement¹⁹ is Merged into the derivation of the complements to emotive factive heads (e.g. *glad*) and semi-factive heads (e.g. *know*) whose numerations include no overt Determiner. According to this hypothesis, the lexical head selects a D label syntactic object, rather than CP directly. This hypothesis offers clear predictions about distribution of D label constituents as complements to factive heads as well as predictions concerning wh-extraction from (apparent) CP complements to factive heads. Specifically, complements to factive heads should share distribution patterns with other definite DPs in the language, and should behave similarly to other definite DPs in terms of object and adjunct extractions out of their domain. The proposal made here is that the way that each language projects features in the DP, whether through syncretic D heads or via distinct functional projections in the DP, will determine the properties of [Spec, DP], and therefore how extractions pattern in each language.

¹⁹ This is essentially the same configurations as Kayne's (1994) Raising analysis for relative clauses: D takes CP as complement, D projects.

In Kiparsky and Kiparsky (1970) (hereafter K&K), an NP optionally filled with *fact* is posited to dominate S (or the embedded CP) at syntactic deep structure of complements to factive heads, as in (1), essentially making them Complex NPs (and therefore subject to Ross's (1967) Complex Noun Phrase Constraint). That some factive predicates may appear without an overt *fact* is attributed to some rule of phonological *fact* deletion.

(1) Kiparsky and Kiparsky (1970) hypothesis

a. Factive



b. Non-factive



The semantic presupposition then is due to the head noun *fact* at deep structure that is present in factives but not in non-factives. Syntactically, the deep structure head noun *fact* is also exploited by a series of transformations in order to account for the fact

that only the so-called factive heads may take a complement clause headed by the noun *fact*²⁰ in surface structure or may take a gerund as complement (which is also nominal in distribution), as in (2) and (3), and that only non-factives allow for exceptional case marking constructions²¹, as in (4). Thus in English, factive and non-factive heads take different types of complements, indicating that these two semantic classes of predicates also differ with respect to the syntactic structure of their complements (see also the discussion in de Cuba 2007).

- (2) a. I'm glad about the fact that you decided to say.
b. *I think the fact that you decided to stay.²²
- (3) a. I'm glad about your deciding to stay.
b. *I think your deciding to stay.
- (4) a. *I'm glad about him to have been the one who did it.
b. I believe him to have been the one who did it

²⁰ Although this is not true of all factive predicates, as in (i).

(i) *I know the fact that you decided to stay.

²¹ Again, this is not necessarily true of all non-factives, as in (ii).

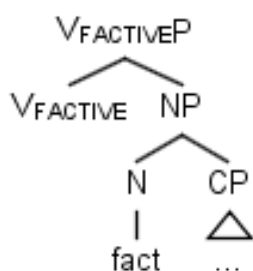
(ii) ??I think him to be the one who did it.

²² Since *glad* is not a case assigner, I assume that *about* in (2a) is added in order that Case be assigned to the DP. Since *think* is a case assigner, I assume that *think about DP* is a different derivation from *think CP*, and therefore will not analyze constructions such as *think about DP*.

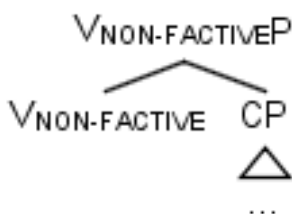
de Cuba (2007) includes an updated diagram of K&K's (1970) hypothesis in his summary of K&K's (1970) work. In the modern version of generative grammar, K&K (1970) would appear as in (5) (as in de Cuba 2007).

(5) An updated version of Kiparsky and Kiparsky's (1970) hypothesis

a. Factive



b. Non-factive



My hypothesis supports K&K's basic insight about the syntactic category of complements to factive heads. I provide cross-linguistic evidence for a D label complement of factive heads and a principled explanation of these facts based on the labeling algorithm of Chomsky (2008) and the selectional restrictions (both syntactic and

semantic) of the factive lexical heads in certain derivations²³. For factive heads like *know* or *glad*, if no D label (overt or covert) is available in the numeration for the factive complement, the derivation will not converge. Rather than hypothesizing a uniform null head noun *fact* for factive complements, my hypothesis states simply that a derivation with a factive head will converge only in the case that it has a DP complement, regardless of the origin of this DP in the derivation. In other words, the universal here is not the structure of the complement itself, but the requirement that factive complements be definite DPs of some sort (whether headed by an overt or covert element).

In §3.1. I will discuss a derivation which supports the hypothesis in (6) in languages like English and Spanish. In free relative constructions an overt D is present in the numeration, and therefore no covert D is required for convergence with factive lexical heads. Therefore, at the (internal) Merge of D and CP, D projects and the complement to a factive head is a DP. This is the same structural configuration that I propose for all factive complements. The rest of this chapter deals mainly with derivations in which a covert D is proposed to take the CP as complement in order that the derivation converge. The free relative derivation shows that even English and Spanish utilize the DP-over-CP construction regularly. This construction offers morphological evidence in English for the hypothesis repeated below in (6) for all factive complements.

²³ For example, *alegrar* ‘to make glad’ and *alegrarse* ‘to be glad’ may accept different semantic and syntactic types of complements. This will be discussed further in Chapter 4. Although it is important here to recognize that interpretation and selectional restrictions come from the structure, not necessarily the lexical head itself. In this thesis I focus mainly on derivations with *alegrarse* ‘to be glad’.

In the rest of this chapter I will discuss the predictions made by the claim that all complements of factive heads are DPs, both with emotive factive heads as in (6a) and semi-factive heads as in (6b), for Spanish in §3.2., English in §3.3., Tatar in §3.4., and Mayangna in §3.5. The main prediction discussed is that factive complements should behave like other definite/referential DPs in each language with respect to distribution and wh-extraction patterns. Melvold (1991) draws attention to the fact that factive CPs pattern with definite, but not indefinite, DPs in terms of extraction. The data below from Tatar will show that extraction is grammatical with definite DPs and also from factive complements, which falls in nicely with the hypothesis presented here. Definiteness itself is not sufficient to derive extraction facts, but rather the properties of the definite DP in each language will be shown to be the deciding factor.

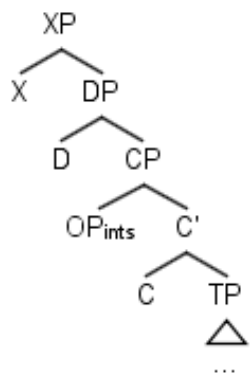
I will discuss some relevant properties of the definite DP in each of the four languages in order to interpret the predictions made by the structures in (6). At the end of the section dedicated to each language, I will offer an analysis of [Spec, DP] in each language. I will focus on the functional projections in the DP of each language, and how each language distributes universal features among the functional categories in the DP.

I will base this analysis on the insight in Giorgi and Pianesi (1997) that languages may assign multiple features to a single projection, creating syncretic heads; or alternatively a language may assign a full projection to each feature, common in agglutinating languages like Tatar. I will also assume that D is a universal functional category (Longobardi 1994, following the basic proposal from Abney 1987) which takes a predicate (of type $\langle et \rangle$) and returns an individual (of type $\langle e \rangle$), i.e. that D is of type

<<et>, e> (Heim and Kratzer 1998)²⁴. Furthermore, I assume that D is present even in languages without overt Determiners (Progovac 1998). I will assume that D^0 is a phase head (Svenonius 2003), and therefore has both an Edge Feature for attracting wh-elements to its Specifier, and uninterpretable Agreement features which it may hand down to or share with lower projections (Chomsky 2008). Furthermore, the mechanism whereby the uninterpretable agreement features on D^0 are ‘handed down’ is something like the ‘feature sharing’ discussed in Gallego (2010) and references therein. Combined with Giorgi and Piansesi’s (1997) observation on the ways in which languages can distribute features among functional heads, the ‘feature sharing’ between D^0 and $Poss^0$ in each language contributes to the way in which [Spec, DP] behaves. A detailed (but far from exhaustive) discussion of [Spec, DP] will be undertaken for each language.

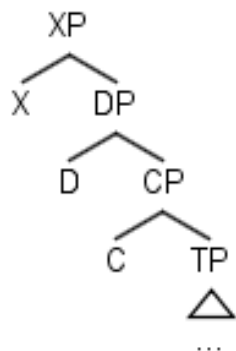
The relevant part of the structure in (6) under discussion in this chapter is the label of the constituent that is complement to the lexical head X.

- (6) a. D-label complement to an emotive factive head (e.g. *glad*)

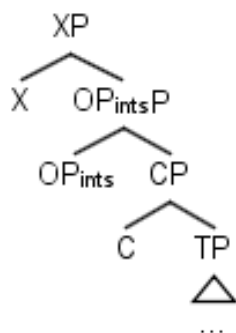


²⁴ More will be said on the semantic types of the complement clauses in Chapter 4.

b. D-label clausal complement to a semi-factive head (e.g. *know*)



c. OP_{ints} -label complement to a propositional/intensional head (e.g. *think*)



3.1. Free relative constructions

As expected based on the hypothesis in (6), the D element that Merges with CP and projects may be an overt D element or a covert one. An example of a D label lexical constituent where no null D is necessary is with complements headed by *wh*-elements. In fact, this construction uses the same structure as in (6a) and (6b), where a D label element Merges with CP, and D projects. (7) shows a *wh*-headed complement to semi-

factive *remember*, (8) shows a wh-headed complement to emotive factive *glad*, and (9) shows a wh-headed complement to intensional *think*.

(7) I remember what they sang last night.

(8) #I'm glad about what they sang last night.

(9) *I think what they sang last night.

(7) and (8) are both structurally grammatical, while (9) is not, as expected based on the distribution data discussed for English DPs in §3.3.1 below. Wh-headed complements of emotive factive heads like *glad* have an additional eventive interpretation which is not given with semi-factives like *remember*, making wh-headed complements to emotive factive heads less natural than wh-headed complements to semi-factive heads. I will discuss this phenomenon in more detail in Chapter 4.

The important point in this section is that some derivations with factive heads include overt D elements, therefore no null DP or deep structure *fact* is necessary in then numeration for convergence. In the derivation under question here, the wh-element itself projects after Merging with C, providing the D label for Merger with the factive head. In order to derive sentences like (7) and (8), the necessary feature at play is the Edge Feature that C^0 has as a phase head, which attracts the wh-element to its (potential) Specifier position. I follow Donati (2006) and Chomsky (2008) in saying that the derivation of any declarative embedded CP, that is a C^0 with no [Q] feature, that

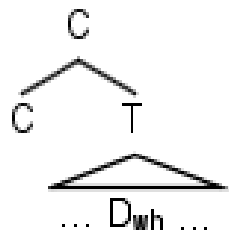
includes movement of a wh-element proceeds as follows. This derivation will be shown to explain the derivation of the embedded clauses of sentences like (10), as well (11):

(10) I know [what_i he ate t_i].

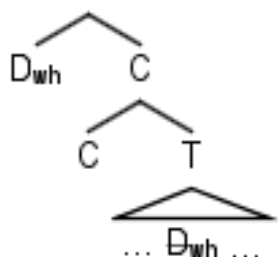
(11) What_i do you think [t_i [he ate t_i]?

In the first stage of the derivation of the embedded clause in (10) or (11), C Merges with T, and C projects.

(12) C merges with T, C projects:

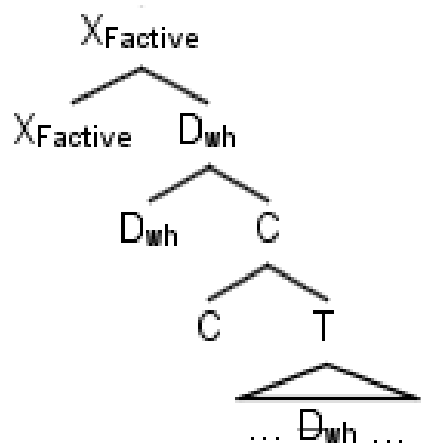


- (13) A second Merge (potentially a Specifier position) is licensed by the movement of a wh-word which raises from the embedded TP and Merges to C attracted by the Edge Feature on C (Chomsky 2008).



After (13), two options are available to the derivation, given that both D_{wh} or C may project, becoming the label and driving subsequent operations (Chomsky 2008). It is at this step that the two derivations, *I know [what he ate t]* versus *What do you think [t [he ate t]]* are differentiated. In (14), the new Syntactic Object has a D-label due to the fact that the D_{wh} projects. This Syntactic Object then merges with a ‘factive’ head (e.g. *know*), forming a well-formed sentence like *I know [what he ate t]*, with a D labeled complement. No null D is postulated for this derivation, since the syntactic selectional restriction that the factive head Merge with a DP is satisfied by the D_{wh} .

- (14) D_{wh} projects, and the new D-label Syntactic Object Merges with a 'factive' head
(e.g. *know*):



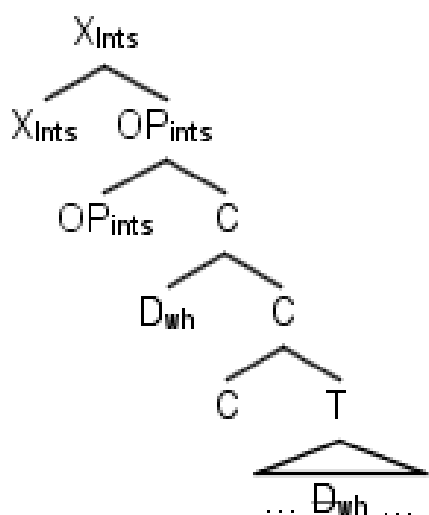
As stated above, in (14), there is no need for a null D projection, since the projected wh-element is itself a DP, satisfying the factive head's selectional restriction. In fact, Kiparsky and Kiparsky's (1970) proposal of a null NP (or DP), optionally filled with 'the fact' over factive CP complements makes the wrong predication in such cases, as in (15d).

- (15) a. I regret [_D [_C that I said what I did]]
 b. I regret [_D the fact [_C that I said what I did]]
 c. I regret [_D [_D what I said]]
 d. *I regret [_D the fact [_D what I said]]

The fact (that) and a *wh*-headed CP cannot co-occur since N (*fact*) can't take a DP complement, [_{DP} *what I said t*]; so it seems to be the case that a null D or a projecting D_{wh} are two alternative structure building devices to yield a D label for the Syntactic Object to be merged with the factive head in the numeration.

(16) shows the case where C projects, becoming the label for the new Syntactic Object, allowing for further Merges with semantic operators or for the new syntactic object to undergo other discourse related operations (Topic, Focus, etc.). Since D_{wh} did not project and become the label for the new Syntactic Object, it stays on the Edge of the phase CP, remaining visible to operations in higher phases, such as raising to matrix C for matrix scope in the case of a [+Q] matrix C⁰ as in (11).

(16) C projects, merges with an intensional Operator, which projects. The new Syntactic Object Merges with an intensional head (e.g. *think*):



Such a derivation may also explain in part why object extraction from factives is of reduced grammaticality. If the *wh*- element and its D-label has projected and Merged with a lexical head, when it is Moved, it will not move with its constituent, thus the ungrammaticality. Furthermore, upon projecting, the *wh*-element also fills the position of a D head, making movement to a Specifier position impossible, since Specifiers are phrasal positions.

The free relative construction is one example of the DP-over-CP structure at work in the syntax of English. It is the same basic structure which is being proposed for factive complements in general. Cases where this structure is not so apparent are discussed in the following sections.

3.2. Spanish

In this section, I will discuss the claim by the hypothesis in (6) that factive heads take DP complements, even when this is not apparent in the morphology of embedded clauses in Spanish. I will do so by discussing the distribution of syntactic category of complements of emotive factive predicates (*alegrarse* ‘to be glad’) in Spanish, also mentioning the patterns associated with semi-factive predicates (e.g. *acordarse* ‘to remember’ and *saber* ‘to know’) and intensional predicates (e.g. *creer* ‘to believe/think’). I will also use extraction facts to compare the properties of factive complements to other definite DPs in Spanish, showing that definite DPs and factive complements behave similarly, resisting extraction from their domain. Distribution data

and extraction facts taken together indicate that factive complements are in fact definite DPs.

3.2.1. Distribution

In Spanish, only factive heads (e.g. *saber* ‘to know’ or *alegrarse* ‘to be glad’ types) may take DP complements, as in the following sentences. (17) shows *alegrarse* ‘to be glad’ which takes a PP complement, since it is not an Accusative Case assigner, with a referential (non-eventive) definite DP, the result of which is infelicitous. (18) shows *alegrarse* ‘to be glad’ with a PP complement with an eventive DP, which is felicitous.

(17) #Me alegro de esas canciones.

SE be.glad_1s P those songs

‘I’m glad about those songs.’

(18) Me alegro de tu decisión de quedarte.

SE be.glad_1s P your decision P stay_INF_CL3s

‘I’m glad about your decision to stay.’

Both (17) and (18) are structurally grammatical, though the non-eventive DP in (17) is infelicitous, and the eventive DP in (18) is felicitous. This fact is discussed further in Chapter 4. What is important here is the observation that *alegrarse* ‘to be glad’ may take a PP complement with a DP as complement of P. Below, (19) shows semi-factive *saber* ‘to know’ which takes a referential (non-eventive) DP with a referential (non-eventive) reading. In (19) a reflexive pronoun also appears with *saber* ‘to know’,

although *saber* ‘to know’ retains its ability to assign Accusative case, differentiating it from pronominal verb constructions like *alegrarse* ‘to be glad’, which are not Accusative case assigners²⁵; (20) also shows semi-factive *acordarse* ‘to remember’ with a PP complement and a referential (non-eventive) DP, which is felicitous, in contrast to (17) above.

- (19) Me sé esas canciones que tocaron hoy.
 SE know_1s those songs C play_pst.3p today
 ‘I know those songs that they played today.’
- (20) Me acuerdo de esas canciones.
 SE remember_1s P those songs
 ‘I remember these songs.’

(19) and (20) are significant since they show that semi-factive lexical heads may also take DP complements (or PP, in the case of (20)). When they take DP complements without event structure, the sentence is felicitous, contrary to what we observed with non-eventive DP complements to emotive factives above. These facts are to be discussed further in Chapter 4, when I discuss the intensional Operator that I propose to

²⁵ The reason for the appearance of this reflexive pronominal is unclear. English has only one lexical verb *know* which is ambiguous between two types of ‘knowing’; knowing a fact and being familiar with something. I include (19) here since the ‘knowing’ alternative to *saber* ‘to know a fact’, *conocer* ‘to know, be familiar with’ does not take clausal complements, making it difficult to evaluate the claims in this thesis. This is a complication that should be addressed in future work on the semi-factive class of predicates.

be present in the derivation of the emotive factive, but not the semi-factive. Since this Operator binds the event argument, it is unsurprising that emotive factive complements with no event argument are infelicitous. Below, (21) shows the ungrammaticality of a DP complement with intensional *creer* ‘to think’, even when the complement has event structure, as in (22), in direct contrast to what we witnessed with the emotive factive *alegrarse* ‘to be glad’ above.

(21) *Creo estas canciones.

think_1s these songs

‘I think these songs.’

(22) *Creo mi decisión de cantar.

think?1s my decisión P to.sing

‘I think my decision to sing.’

As these examples show, semi-factives and emotive factives may take DP (or PP) complements, while intensional *creer* ‘to think’ does not. The fact that some semi-factive heads and some emotive factive heads take tensed CP complements introduced by the Preposition *de* (see §1.1.1.) may be a further indication that the CP that factive heads select is in fact a DP, since Prepositions Merge with DPs, projecting P.²⁶ The

²⁶This may well be a simplification of a more complicated empirical situation in Spanish. I will not discuss the well-known ‘dequesimo’ constructions such as *pienso de que...* ‘I think of that...’. Although in future analyses, this complication will need to be addressed.

eventive reading of DP complements to emotive factive heads will be discussed in Chapter 4. I include Table 1 as a summary of the distribution facts for Spanish DPs.

Table 1 Distribution of Spanish DPs

	DP complement	Tensed CP
Emotive factive <i>alegrarse</i> 'to be glad'	√	√
Semi-factive <i>saber</i> 'to know'	√	√
Intensional <i>creer</i> 'to think'	*	√

3.2.2. Extraction facts

In this section I will discuss adjunct extractions from complements to emotive factive (e.g. *alegrarse* 'to be glad') and semi-factive (e.g. *saber* 'to know') predicates as well as extractions from definite DPs in general in Spanish. Based on the hypothesis, factive complements should behave like other definite DPs in terms of extractions. (23) is a base sentence where a definite DP is object of a verb which does not take clausal complements, *llamar* 'to call'; (24) is the extraction of an object from a definite DP object; (25) is the extraction of an adjunct from a definite DP object.

- (23) Llamé al estudiante de historia de Rusia.
 call_pst.1s to_D student P history from Russia
 'I called the new student of history from Russia.'
- (24) *¿De qué_i llamaste al estudiante t_i de Rusia?
 P what call_pst.2s to_D student t from Russia
 'What did you call the student of from Russia?'
- (25) *¿De dónde_i llamaste al estudiante de historia t_i?
 from where call_pst.2s to_D student P history t
 'Where did you call the student of history from?'

(24) shows that object extraction from a definite DP object is ungrammatical. (25) shows that adjunct extraction from a definite DP object is also ungrammatical. Below, (26) is a base sentence in which a definite DP is a predicate in a copular construction; (27) is the extraction of an object from a definite DP which is a predicate in a copular construction; and (28) is the extraction of an adjunct from a definite DP which is the predicate in a copular construction.

- (26) Éste es el estudiante de historia de Rusia.
 this be_3s D student D history from Russia
 'This is the student of history from Russia.'

- (27) *¿De qué_i es éste el estudiant_{t_i} de Rusia?
 P what be_3s this D student t from Russia
 'What is this the student of from Russia?'
- (28) *¿De dónde_i es éste el estudiante de historia t_i?
 from where be_3s this D student P history t
 'Where is this the student of history from?'

(27) shows that an object extraction from a definite DP which is the predicate in a copular construction is ungrammatical. (28) shows that adjunct extraction from a definite DP which is the predicate in a copular construction is also ungrammatical.²⁷

The results of object extraction from definite DPs appears to be contrary to a fair amount of data presented in Ticio (2003) who discusses the well-known observations that extraction of objects from definite DPs is generally grammatical in Spanish, as in (29). Extraction from definite DPs is clearly a constrained phenomenon in Spanish.

- (29) ¿De qué_i artistas salieron publicadas las fotos t_i?
 P which artists come.out_3p published D pictures t
 'What artists did the pictures of get published?'

²⁷ It has been noted in the literature (discussed in Melvold 1991, Campell 1996) that extraction of an object to N is generally possible from indefinite DPs, but not from definite DPs. Since we are hypothesizing that complements to factive heads are definite DPs, we expect extraction from factive complements to pattern after extraction from definite DPs.

The fact that some definite DPs may be extracted from while others may not be is taken up in Torrego (1987) and Ormazabal (1991), both of whom support the claim that Romance has two flavors of the definite Determiner, one strong and one weak. The weak Determiner may be said to occupy a lower position in the structure (possibly as head of Q) than the strong one. Thus, in the case that a weak definite Determiner is present in the derivation, the DP projection is absent, or at least no constraints are placed on [Spec, DP] by the definiteness of the D in its head position. When the strong Determiner is uncontroversially present and therefore the definite article is in D, as in the presence of a Quantifier or number phrase as in (30), extraction is impossible.

- (30) *¿De qué_i cantante salieron publicadas las tres fotos t_i?
 P which singer come.out_3p published D three pictures t
 ‘Which singer did the three pictures of get published?’

Following this proposal in the literature, essentially what I propose for factive complements in Spanish, then, is that the D that takes CP as complement and projects is the strong, rather than the weak definite Determiner. Thus it blocks extraction, as in (30) above. From here on, all discussion of the definite Determiner refers to the strong definite Determiner as in (30).

Based on the hypothesis in (6) and the fact that extraction from DPs headed by the strong definite Determiner are ungrammatical, we will expect that both object and adjunct extraction will be ungrammatical from a factive complement, which I am

proposing is in fact a definite DP. We saw in §2.1.2. that object extraction from factive complements was ungrammatical (or very marginally acceptable). I repeat that data here. (31) shows the very marginally acceptable extraction of an object from the complement of emotive factive *alegrarse* ‘to be glad’. (32) shows the also very marginally acceptable extraction of an object from the complement of *saber* ‘to know’. And (33) shows the grammatical extraction of an object from the complement to *creer* ‘to think’.

(31) ?*¿qué_i te alegras de [que tu hijo haya comido t_i]?
 what be.glad.2s P C your son AUX_subj.3s eat_PART t
 ‘What are you glad that your son ate?’

(32) ?*¿qué_i sabes [que tu hijo ha comido t_i]?
 what know_2s C your son AUX_3s eat_PART t
 ‘What do you know your son ate?’

(34) ¿Qué_i crees [que tu hijo ha comido t_i]?
 what think_2s C your son AUX_3s eat_PART t
 ‘What do you think your son ate?’

Below, I present data that shows adjunct extraction from similar domains. (35) shows that adjunct extraction from the clausal complement to *alegrarse* ‘to be glad’ is ungrammatical. (36) shows that adjunct extraction from the complement of semi-factive *saber* ‘to know’ is also ungrammatical, as expected based on the hypothesis. (37) shows

that adjunct extraction is grammatical from the complement to the intensional verb *creer* ‘to think’, which is included by way of contrast.

(35) *¿Cuándo_i te alegras de que comiera el pastel t_i?

When be.glad_2s P C eat_past.subj.1s D cake_ms t

‘When are you glad that I ate the cake?’

(36) *¿Cuándo_i sabes que comí el pastel t_i?

when know_2s C eat_past.ind.1s D cake

‘When do you know that I ate the cake?’

(37) ¿Cuándo_i crees que comí el pastel t_i?

when think_2s C eat_past.ind.1s D cake

‘When do you think I ate the cake?’

Only the intensional predicate with *creer* ‘to think’ in (37) is grammatical with an adjunct extracted from the embedded clause into [Spec, CP] of the matrix clause. Both the semi-factive *saber* ‘to know’ and emotive factive *alegrarse* ‘to be glad’ do not allow for adjuncts to be extracted out of their complement clauses. This pattern is again identical to what we observed with (strong) definite DPs, as shown in (30) above.

3.2.3. [Spec, DP] in Spanish

From the data above we may tentatively conclude that the Specifier of the strong D that is projected when the strong Determiner is Merged into the derivation does not act as an escape hatch in Spanish.

The different properties of [Spec, DP] cross-linguistically are discussed in Szabolcsi (1994) and Alexiadou (2001). Alexiadou (2001) discusses the observations that lead to the conclusion that [Spec, DP] is an A-position in English and an A'-position in Modern Greek. In Modern Greek, DP internal focalization is possible, as (38) shows. Similarly, wh-elements may be fronted within the DP, as (39) shows²⁸. Both of these behaviors are characteristic of [Spec, CP] in the clausal domain (examples from Alexiadou 2001).

- (38) a. to vivlio tu Chomsky
 D book D_GEN Chomsky
 b. tu Chomsky to vivlio
 D_GEN Chomsky D book

- (39) a. to vivlio tinos
 D book whose
 'whose book'
 b. tinos to vivlio
 whose D book

A DP internal wh-element (at least possessor) can even be extracted from the DP to [Spec, CP] of the matrix clause, as in (40). Therefore, [Spec, DP] acts as an escape hatch for extraction into higher phases. Similar facts hold for Hungarian, as discussed in

²⁸ All examples in Modern Greek are from Alexiadou (2001). I do not include translations where they are not included in the original text, although the glosses should suffice to make the point.

Szabolcsi (1994). Both authors include only data on *wh*-possessor extraction from DP, while in Tatar we will see evidence that all kinds of *wh*-elements may be extracted out of a definite DP, as will be shown below.

- (40) a. *mu ipes oti diavases [to vivlio tinos]*
 me told_2s C read_2s D book whose
 ‘You told me you read whose book?’
- b. *mu ipes oti diavases [tinos_i [to vivlio t_i]*
 me told_2s C read_2s whose D book t
 ‘You told me you read whose book?’
- c. *tinos_i mu ipes oti diavases to vivlio t_i*
 whose me told_2s C read_2s D book t
 ‘You told me you read whose book?’

While the exact reason that this is the case is not clear, one reasonable explanation is the architecture of the DP layers in each language. For example, it seems in Spanish that the features [possessor]²⁹ and [definite]³⁰ are represented in a single syncretic head

²⁹ In Spanish possessors other than possessive pronouns are introduced via a Prepositional Phrase headed by *de*. However the pronominal possessive system is sufficient to show a contrast with languages like Tatar, which have a morphologically active PossP dedicated to pronominal possessors and nominal agreement morphology on the Noun.

³⁰ I remind the reader that the exact definitions for concepts like ‘definiteness’ and ‘referentiality’ must be more clearly defined in a finer-toothed analysis. I use the two

in the syntax of Spanish DPs. We have referred to this syncretic D^0 as the strong D, as (41) shows.³¹

- (41) a. El libro
 D book
 'the book'
- b. mi libro
 my book
 'my book'
- c. *el mi libro
 D my book
 'the my book'
- d. *mi el libro
 my D book
 'my the book'

terms somewhat interchangeably; this is a point in which future analysis must be sharper.

³¹ It is true that other Romance languages like Catalan and Italian do allow for D-Poss-N construction, which may mean that Catalan and Italian do have a syntactically projected PossP. As I discuss the Tatar DP below, it will become clear that another variable is at play, specifically the presence or absence of a definite Determiner in the language. While Catalan and Italian allow different configurations in the DP than Spanish, they all share the property of having an overt definite Determiner, differentiating them from Tatar.

Since D^0 does not share its uninterpretable agreement features with a lower projection, [Spec, DP] itself is an A-position. Compare this situation to what happens at the clausal level. C^0 , as a phase head, shares its agreement features with T^0 , which makes [Spec, TP] the A-position, freeing up [Spec, CP] as an escape hatch. The fact that Spanish uses a single syncretic D^0 which hosts both Edge Features *and* uninterpretable agreement features³² and is the locus of the [definite] feature in the present of the overt definite article. All of this means that [Spec, DP] is an A-position and therefore not available as an escape hatch.

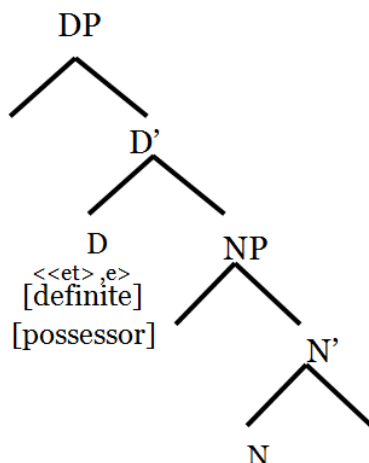
As we discuss the Tatar data below, this last point may be an important observation. One way in which Tatar differs from Spanish is that Tatar does not have an overt definite Determiner. Tatar uses alternate functional projections to encode the features [possessor] and [definite], such as a PossP and KP (for morphological case, discussed below) leaving [Spec, DP] underspecified for the types of elements that may appear there, and leaving it available as an escape hatch for extraction. This configuration of the definite DP in Tatar may in fact be similar to the configurations which allow extraction from indefinite DPs or DPs headed by the weak Determiner, as shown in (29) above.

³² I will not address derivations with postnominal possessors introduced by prepositions, as in (iii). Since both the possessor and the definite article appear, this is a different derivation at play, since in (41) above the prenominal pronominal possessor and definite article could not co-appear.

(iii) El libro de Juan.
 D book P Juan
 'Juan's book.'

A simplified diagram of a definite DP in Spanish is shown in (42).³³

(42) Spanish strong definite DP³⁴

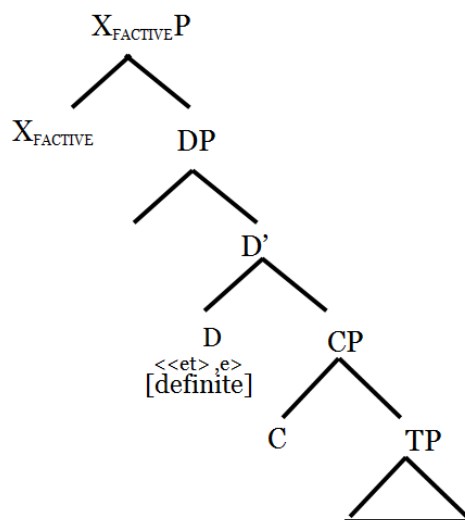


In (43) I include the structure of a factive complement in Spanish, again noting that the fact that [Spec, DP] is not an escape hatch for extraction, presumably due to the [definite] feature associated with the strong definite D in Spanish.

³³ Another potential analysis for specificity and its relationship with [Spec, DP] is from Campbell (1996), where a specificity operator is merged into [Spec, DP] (or some Specifier in the DP field) and binds the abstract subject position in the NP. This analysis is similar to the accounts of the specificity or referentiality of factive complements in Melvold (1991) and Haegeman and Ürögdi (2010). I differ from them in saying that this account is not sufficient to fully explain the behavior of factive complements cross-linguistically, as will become clear in §3.3. For this reason I do not include a specificity operator in [Spec, DP] in (44), although I leave further analysis of this detail for future research.

³⁴ The realization of the [Possessor] feature would be a pronominal possessive element like *mi* 'my' in *mi libro* 'my book'.

(43) Factive complement in Spanish



3.2.4. Conclusions

In this section I have discussed the distribution patterns of DP complements of emotive factive predicates (*alegrarse* ‘to be glad’) and semi-factive predicates (e.g. *saber* ‘to know’), as well as extraction patterns from factive complements. This data appears to corroborate the hypothesis in (6), that the complements of factive heads are structurally definite DPs. Furthermore, we have observed that [Spec, DP] of the strong definite D in Spanish is not available as an escape hatch for elements to be moved into higher phases in the derivation since it is an A-position (hosting agreement features of the phase head D^0). Under this view, only elements which contribute to a definite/possessive reading will be acceptable in the Specifier position of the strong definite D, thus precluding *wh*-elements on their way out. While I leave more precise details for future work, it seems to be the case that the feature matrix of the definite

Determiner in each language determines the types of elements that may Merge in or Move through its Specifier.

Table 2 Projections in the Spanish DP

	Overt def D^0	Overt PossP	Overt KP	Extraction from def DP	Extraction from factive compl
Spanish	Yes	No	No	No	No

3.3. English

As I did for Spanish in §3.2., in this section, I will discuss the distribution of syntactic category types of complements of emotive factive predicates (e.g. *glad*) in English, as well as complements to semi-factive predicates (e.g. *know*), both of which I claim to be definite DPs. I will also include discussion of complements to intensional predicates (e.g. *think*) for the sake of contrast. I will also use extraction facts to compare the properties of factive complements to other definite DPs in English, showing that definite DPs and factive complements behave similarly.

3.3.1. Distribution

In this section I show, along the lines of K&K (1970), that in English, D label constituents are acceptable as complements to factive heads but not to intensional ones. Additionally, there is a difference in interpretation between D label complements

to semi-factive heads (e.g. *know*), which may be given a referential interpretation, and complements to emotive factive heads (e.g. *glad*), which must be given an eventive interpretation. A fuller discussion of this discrepancy will be undertaken in Chapter 4.

Based on the hypothesized structure for factive predicates presented in this thesis, as in (6) above, both subtypes of factive heads should allow for D label complements, while intensional heads (e.g. *think*) should not. (44) shows emotive factive *glad* with a PP complement (since *glad* is not an Accusative case assigner, the Preposition is inserted) and a non-eventive DP, which is infelicitous; (45) shows *glad* with a PP complement and an eventive DP, which is felicitous; (46) shows the emotive factive *regret* with a referential (non-eventive) DP complement, which is infelicitous; (47) shows the emotive factive *regret* with an eventive DP complement, which is felicitous.

(44) #I was glad about those songs.

(45) I was glad about your decision to stay.

(46) #I regret those songs.

(47) I regret my decision to stay.

(44) – (47) show that DPs (or PPs in the case of *glad* since it is not an Accusative case assigner) as complements to emotive factive heads are structurally grammatical, though are felicitous only in the case that the DP complement represents an eventuality (either stative or eventive). In contrast, (48) below shows semi-factive *know* with a referential

DP, which receives a referential (non-eventive) reading felicitously; (49) shows semi-factive *remember* with a referential (non-eventive) DP which is also felicitous.

(48) I knew the songs they played tonight.

(49) I remember those songs.

(48) and (49) show that like emotive factives, semi-factive heads may take DP complements. Semi-factives differ from emotive factives, though, in that they do not require an eventive DP for felicity. This difference between the two types of factive predicates will be discussed in Chapter 4. Below, (50) shows intensional *think*, which may not take a DP complement, even if the DP has event structure as in (51), in contrast to what we witnessed with emotive factive *glad* above.

(50) *I thought those songs.

(51) *I thought my decision to stay.

What is important from these sentences for our discussion in this chapter is that both emotive factive (e.g. *glad* or *regret*) and semi-factive (e.g. *know*) heads may take DP complements, while intensional heads (e.g. *think*) may not,³⁵ as predicted by the

³⁵ I do not consider sentences like (iv) below, since *think* is a structural case assigner, including a Preposition like *about* means that a different derivation is at work.
(iv) I thought about those songs.

hypothesis in (6). I include Table 3 here as a summary of the relevant distribution facts for English.

Table 3 Distribution of English DPs

	DP complement	Tensed CP
Emotive factive <i>glad</i>	✓	✓
Semi-factive <i>know</i>	✓	✓
Intensional <i>think</i>	*	✓

3.3.2. Extraction Facts

According to the hypothesis in (6), the complement of a factive head should behave like other definite D label constituents in terms of extraction facts. It has been noted in the literature (discussed in Melvold 1991, Campell 1996, among many others) that extraction of an object to N is generally possible from indefinite DPs, but not from definite DPs. Since we are hypothesizing that complements to factive heads are definite DPs, we expect extraction from factive complements to pattern after extraction from definite DPs. (52) below is a base sentence with a definite DP object to a verb *met* which does not take clausal complements; (53) is the extraction of an object from a definite object DP; (54) is the extraction of an object from a definite object DP.

- (52) I met the student of history from Russia.
- (53) *[?]What_i did you meet the student of t_i from Russia?
- (54) *Where_i did you meet the student of history from t_i?

We see in (53) that object extraction from a definite DP object is ungrammatical (or only very marginally grammatical). In (54) we see that adjunct extraction is ungrammatical from definite DPs. Below, (55) is a base sentence in which a definite DP is the predicate in a copular construction: (56) is the extraction of an object from a copular construction with a definite DP; and (67) is the extraction of an adjunct from a copular construction with a definite DP.

- (55) He is the student of history of Russia.
- (56) *[?]What_i is he the student of t_i?
- (57) *Where_i is he the student of history from t_i?

In (56), object extraction from a definite DP which is the predicate of a copular construction is ungrammatical (or very marginally grammatical). (57) shows that adjunct extraction from a definite DP which is the predicate of a copular construction is ungrammatical. As we observed in §2.2.2., object extraction from constituents embedded under factive heads was also ungrammatical (or very marginally acceptable), similar to the judgment for (53) or (56). Below we see sentences which show adjunct extraction from factive complements. (58) shows adjunct extraction from the

complement to emotive factive *glad*; (59) shows adjunct extraction from the complement to semi-factive *know*; and (60) shows adjunct extraction from the complement to intensional *think*.

(58) *When_i were you glad that he ate the cake t_i?

(59) *When_i did you find out that he ate the cake t_i?

(60) When_i did you think he ate the cake t_i?

(58) and (59) show that complements to factive heads do not allow for adjunct extraction, that is, the sentences are ungrammatical under the intended interpretation. (60), on the other hand, is grammatical under the intended interpretation, in contrast to the complements to factive heads. We observe here that factive complements follow the same extraction pattern as definite DPs in English, offering support to the hypothesis that factive complements are themselves definite DPs.

3.3.3. [Spec, DP] in English

As in Spanish, it appears from this data that the [Spec, DP] of a definite DP is not available as an escape hatch for extraction into higher phases in English. The factor that again sets English apart from Tatar is the presence of a definite Determiner in English. Therefore, similar reasoning holds concerning the reason that the Specifier of the definite Determine cannot act as an escape hatch in English. If the phase head D⁰ does not share uninterpretable agreement features to a lower phrase like PossP, then it will

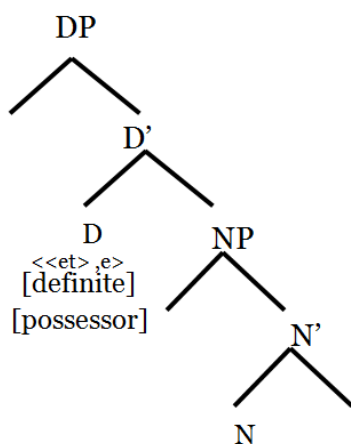
retain then in D^0 , making [Spec, DP] an A-position, and not available as an escape hatch.

If the definite Determiner bears a [definite] or [possessor] feature, then this property will extend to [Spec, DP]. Therefore, only elements which contribute to a definite/possessive reading of the DP are acceptable in [Spec, DP]; such elements preclude most wh-elements which would need to use [Spec, DP] as an escape hatch for extraction into a higher phase.

We remind the reader that Modern Greek is a language which seems to have a different feature matrix on its definite Determiner. As such, it is a language which features DP internal wh-movement, where [Spec, DP] acts as both a landing site for wh-movement and an escape hatch for movement of wh-possessors to [Spec, CP] of the matrix clause. These facts will be discussed further in §3.4.3. as we discuss [Spec, DP] in Tatar.

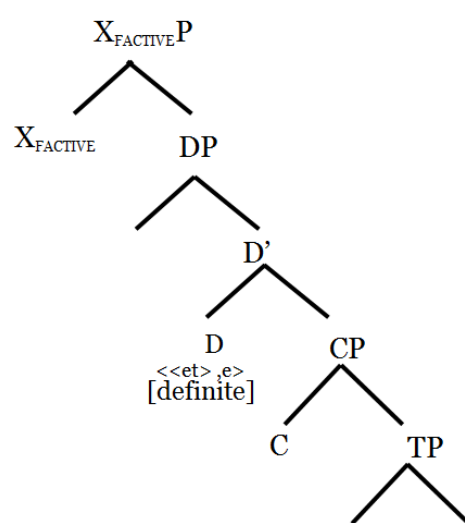
I include a tree diagram of an English definite DP in (61), below.

(61) English definite DP



I also include (62) below, which shows a covert DP which takes CP as complement, with D projecting and Merges with a factive head. Again, the fact that [Spec, DP] may not host wh-elements precludes extraction from factive complements in English due to the feature specifications of the covert definite D.

(62) English factive complement



3.3.4. Conclusions

In this section we observed that in English, emotive factive (e.g. *glad*) and semi-factive (e.g. *know*) heads may take DP complements. In the case that they take morphologically CP complements, they exhibit similar extraction patterns as definite DPs, very marginally accepting object extraction and disallowing adjunct extraction. These data support the hypothesis in (6), that factive complements which appear to be morphologically CPs are actually CPs which have Merged with a definite D element

which projects, whether introduced by an overt or covert D in the derivation.

Intensional heads (e.g. *think*), do not allow D label complements and do allow for both object and adjunct extraction from their embedded CP. Furthermore, [Spec, DP] is not available as an escape hatch for movement of elements into higher phases based on the [definite] or possible [possessor] feature present on the definite D, as shown in the diagram in (61) above.³⁶ I include Table 4 as a summary of the main points from this section.

Table 4 Projections in the English DP

	Overt def D ⁰	Overt PossP	Overt KP	Extraction from def DP	Extraction from factive compl
English	Yes	No	No	No	No

3.4. Tatar

I will now discuss similar distribution and extraction facts for Tatar, showing the similarity between definite DPs and factive complements, which are themselves morphologically DPs in this language. I will also show that factive complements behave like other definite DPs with respect to extraction, allowing for object and adjunct extraction in both cases. This data provides an important contrast to languages like

³⁶ I reserve a more detailed analysis for future research.

English and Spanish, and differentiates the analysis in this thesis from other recent proposals for a syntactic account of factivity.

3.4.1. Distribution

Tatar differs from English and Spanish in that complements to emotive factive (e.g. *glad*) and semi-factive (e.g. *know*) heads are morphologically DPs. They are in fact past participial nominalized constructions (see Sahan 2002 for a detailed analysis of the Tatar participial system).³⁷ Therefore, it is not necessary to establish the parallels between DP complements and CP complements to factive heads. There is, however, some variability in the types of complements that may be embedded under the different types of heads. The emotive factive *şat* ‘glad’ may only take a nominal clause complement as in (63), but a tensed CP complement is ungrammatical, as in (64).

- (63) Äti [Marat_niñ göbädiyä_nı aşı_gan_ı]_na şat
 dad Marat_GEN pasty_ACC eat_GAN_3s_DAT glad
 ‘Dad is glad that Marat ate the pasty.’

- (64) *Min [sin bija_dı_ñ dip] şat
 I you dance_pst_2s C glad
 ‘I’m glad that you danced’

This pattern is similar to that of emotive factives in Basque (de Cuba 2007), as in (65): emotive factives never take finite complements, only nominalized constructions.

³⁷ See also Kornfilt (2001) for a similar claim for Turkish.

Semi-factives in Basque, on the other hand, take finite complements with the Complementizer (*e*)/*a* in Basque, as in (66), again from de Cuba (2007).

- (65) a. Zuriñek Jon joan izana deitoratu du
 Zuriñe_ERG Jon gone have_ART regret AUX
 ‘Zuriñe regrets that John left’ (lit: John having left)

- (66) b. Zuriñek ez da konturatu [gaur astelehena dela]
 Zuriñe no AUX realize today Monday AUX_that
 ‘Zuriñe hasn’t realized that today is Monday’

Tatar differs from Basque in that semi-factive heads may take either nominal clause complements as in (67) or tensed CP complements as in (68).

- (67) Äti [Marat_niñ göbädiyä_nı aşı_gan_ı]_n belä.
 dad Marat_GEN pasty_ACC eat_GAN_3s_ACC know_3s
 ‘Dad knows that Marat ate the pasty.’

- (68) Min [sin aşı_dı_ñ dip] beläm.
 I you eat_past_2s C know_1s
 ‘I know that you ate.’

Finally, intensional *uy/-* ‘think’ is ungrammatical with a nominal clause complement as in (69), while it is grammatical with a tensed CP as in (70).

- (69) *Min [sin_iñ bija_gän_ı]_n uylıy_m
 I you_GEN dance_GAN_poss3s_ACC think_1s
 'I think that you danced'

- (70) Min [Ethan bij_i dip] uylıy_m
 I Ethan dance_3s C think_1s
 'I think Ethan is dancing.'

The distribution data is summarized in Table 5.

Table 5 Distribution of Tatar DPs

	Nominal Clause	Tensed CP
Emotive factive <i>şat</i> 'glad'	√	*
Semi-factive <i>bel-</i> 'know'	√	√
Intensional <i>uyıl-</i> 'think'	*	√

These distribution data support the hypothesis in (6) in an important way: complements to emotive factive heads (e.g. *şat* 'glad') are always DPs (participial clauses), and complements to semi-factive heads (e.g. *bel-* 'know') may be DPs, while complements to intensional heads (e.g. *uyıl-* 'think') may never be DPs.

3.4.2. Extraction Facts

Based on the hypothesis in (6), we predict that extraction out of factive complement clauses should pattern after extraction out of definite DPs in Tatar. For English and Spanish, we observed that this claim predicts that object extraction should be very marginally acceptable, while adjunct extraction is ungrammatical. To evaluate this prediction for Tatar, we first need to discover how extractions out of DPs behave. At this point it is worth remembering here that Tatar is a *wh*-in situ language, as in (71).

- (71) a. Amelia göbädiyä aş_ıy.
 Amelia pasty eat_3s
 ‘Amelia eats pasty.’
- b. Amelia nărsä aş_ıy?
 Amelia what eat_pres.3s
 ‘What does Amelia eat?’

Now with these facts in mind we see (72) below, which is a base sentence in which the definite DP is the object of *bel-* ‘know’; (73) is the extraction of an object from a definite object DP; (74) is the extraction of an adjunct from a definite object DP.

- (72) Min [Tatarstan_nan tarix student_i]_n bel_di_m.
 I Tatarstan_ABL history student_poss3s_ACC know_pst_1s
 'I knew the student of history from Tatarstan.'
- (73) Sin [Tatarstan_nan nindi fän student_i]_n bel_di_ñ?
 you Tatarstan_ABL what field student_poss3s_ACC know_pst_2s
 'What field (of study) did you know the student of from Tatarstan?'
- (74) Sin [qaysı il_dän tarix student_i]_n bel_di_ñ.
 I which country_ABL history student_poss3s_ACC know_pst_2s
 'Where did you know the student of history from?'

Contrary to what we observed in English and Spanish, both object (73) and adjunct (74) extraction from a definite DP object is grammatical in Tatar.

Now, in (75) below we see a base sentence in which a definite DP is the predicate of a copular construction; (76) is the extraction of an object from a copular construction with a definite DP; (77) is the extraction of an adjunct from a copular construction with a definite DP.

- (75) Bu [Tatarstan_nan tarix student_i].
 this Tatarstan_ABL history student_poss3s
 'This is the student of history from Tatarstan.'

- (76) Bu [Tatarstan_nan nindi fän student_i]?
 this Tatarstan_ABL which field student_poss3s
 ‘What is this the student of from Tatarstan?’
- (77) Bu [qaysı il_dän tarix student_i]?
 thiswhich country_ABL history student_poss3s
 ‘Which country is this the student of history from?’

Again, contrary to what we saw with English and Spanish, both object (76) and adjunct (77) extraction from a definite DP which is the predicate of a copular construction is grammatical in Tatar³⁸. In all of these sentences, the *wh*-element (*nindi* ‘which’, *qaysı* ‘which’, *närsä* ‘what’) may take matrix scope.³⁹ It should be remembered here that Tatar *wh*-in-situ does obey certain locality conditions, since a *wh*-element in an adjunct cannot take matrix scope, as shown in §2.3.2., and repeated as (78).

³⁸ In the presence of an Adjective modifying the head Noun, the extraction is viewed as ungrammatical, as in (v). I do not account for this fact here, although it should be addressed in future work.

(v) *Bu [Tatarstan_nan yaña nindi fän student_i]?
 this Tatarstan_ABL new which field student_poss3s
 ‘What is this the new student of from Tatarstan?’

³⁹ Although I do not offer an analysis of the relationship between the *Q*-morpheme (null) and the *wh*-element in this thesis, the view presented here is compatible with Cable’s (2010) hypothesis that the *Q* particle, phonologically null in Tatar *wh*-questions, adjoins to the phrase with the *wh*-element, but failing to project. Thus when *Q* raises, the phrase containing the *wh*-element remains in situ. Thus there is movement of an operator which is constrained by adjunct islands, as in §2.3.3, but raises from other environments (including from [Spec, DP] of definite DPs) to get the appropriate scope.

- (78) *Sin bu kiçe_nı yarata_sıñ [çönki kem biy_i]?
 you this party_ACC like_2s because who dance_3s
 ‘Who do you like this party because is dancing?’

Based on these data, it appears that all types of extraction are acceptable out of a definite DP in Tatar. Based on the hypothesis in (6), we expect all types of *wh*-elements to be able to take matrix scope out of a factive complement. In fact, this prediction holds true, as in (79) with emotive factive *şat* ‘glad’ and in (80) with semi-factive *bel-* ‘know’.

- (79) Alsu [Marat_nıñ qayşan şangı şu_ğan_ı]_na şat idı?
 Alsu Marat_GEN when ski ski_GAN_poss3s_DAT glad past
 ‘Alsu was glad that Marat went skiing when?’ (non-echo reading)
- (80) Alsu [Marat_nıñ qayşan şangı şu_ğan_ı]_n bel_dı?
 Alsu Marat_GEN when ski ski_GAN_poss3s_ACC know_pst.3s
 ‘Alsu found out that Marat went skiing when?’ (non-echo reading)

As (79) and (80) show, adjuncts extracted from a factive complement may take matrix scope in a question, as can an adjunct from an intensional complement: (81)

shows that adjunct extraction is also possible from complements to the intensional *uy/-* 'think'.⁴⁰

- (81) Äti [Marat qayşan bija_dı dip] uyla_dı?
 Dad marat when dance_pst.3s C think_past_3s
 'When did dad think that Marat danced?'

3.4.3. [Spec, DP] in Tatar

These data indicate something important about the functional layers of the DP in Tatar. Extraction of both objects and adjuncts is possible from definite DPs and factive complements in Tatar, contrary to what we observed for English and Spanish. We did, however observe above the fact that in Spanish DPs headed by the weak definite Determiner, object extraction is possible from DPs, as is object extraction from indefinite DPs in both English and Spanish generally. Tatar is a language with no overt definite Determiner. Therefore, features such as [possessor] or [definite] which are represented in D^0 or [Spec, DP] in English and Spanish are represented in other functional projections such as PossP or KP (for Case/specificity marking) in Tatar. This means that unlike English and Spanish, the phase head D^0 does share its uninterpretable

⁴⁰ Additionally, there is apparently ambiguity between construal with the matrix event or the embedded event, a complication that I acknowledge, but will not pursue further in this analysis. The vital observation here is that DPs and participial complements are both transparent to adjunct extraction.

agreement features with its complement phrase, PossP. Under these circumstances, [Spec, DP] is an A'-position in Tatar, and is a potential escape hatch.

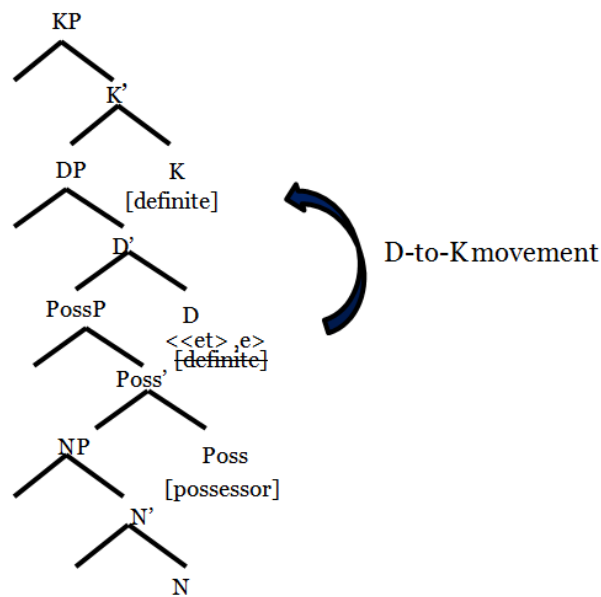
There is one additional fact which sets Tatar apart from languages like English and Spanish even more in this regard. Rather than using a definite article (which Tatar does not have), case marking is used to differentiate definite versus generic objects, as in (82). The Accusative case morpheme has a dual role here, it both marks the object of the verb and the fact that the object is a definite, specific object. I assume that case is represented morphologically in a functional projection KP, which projects above DP.

- (82) a. Sin göbädiyä qayşan aşı_dı_ñ?
 you pasty when eat_pst_2s
 'When did you eat pasty?'
 b. Sin göbädiyä_nı qayşan aşı_dı_ñ?
 you pasty_ACC when eat_pst_2s
 'When did you eat the pasty?'

Thus one feature of this analysis is that the lack of an overt Determiner in Tatar indicates that feature [definite] is passed up to K^0 through head movement of D^0 . This head movement opens [Spec, DP] as an escape hatch for any escaping wh-element. Therefore, in Tatar [Spec, DP] is an A'-position position not linked to any specific feature(s) as in Spanish and English, and may host elements of all sorts, including escaping wh-elements.

In (83) I include a diagram of the definite DP in Tatar, pointing out the presence of the additional functional layers in the Tatar DP, a PossP (Possessor Phrase) and KP (for Case morphology and definiteness). Claiming that the D layer in languages like Spanish and English has a feature which reserves [Spec, DP] for specific kinds of elements, may be tantamount to saying that languages like English and Spanish lack an active functional layer PossP or KP, relegating possessors (or other theta-role related elements in the case of nominalizations, as in Alexiadou 2001) to [Spec, DP], since no [Spec, PossP] or [Spec, KP] exists for possessors or elements denoting definiteness or specificity.

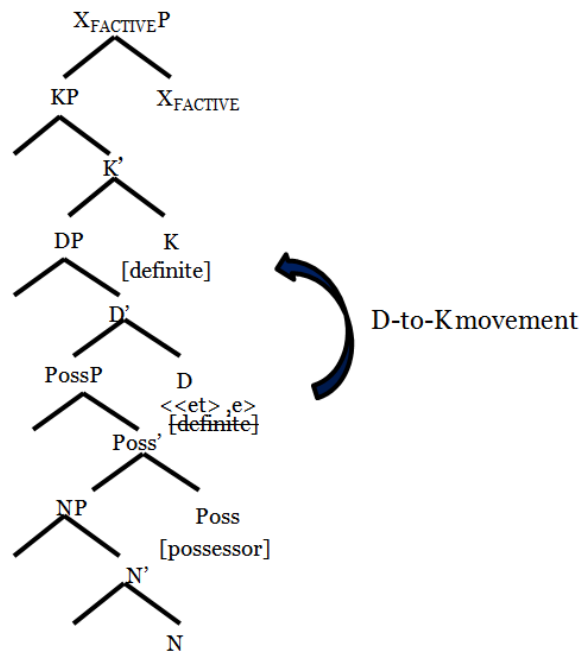
(83) Tatar definite DP



And in (84), we see a similar configuration for a factive complement in Tatar. The fact that there is an additional functional projection in Tatar, PossP, which hosts a

Genitive case-marked possessor (or agent) DP may be responsible for the ability of [Spec, DP] to act as an escape hatch for extraction.

(84) Tatar factive complement



At this point I remind the reader of the similar claim made for Greek discussed in Alexiadou (2001), which I've discussed in §3.2.4. I've included the data from Greek that substantiate this claim, showing both DP internal focalization and wh-movement both inside a definite⁴¹ DP and out of the definite DP to [Spec, CP]. Since Tatar is a wh-in-situ language, at this point it is unclear what other evidence is possible to satisfy the claim

⁴¹ The DP in the examples is headed by the definite Determiner *to*, thus I assume they are in fact definite. It is not clear whether or not a similar strong/weak distinction exists among the definite Determiners in Greek as in Romance.

that [Spec, DP] acts as an escape hatch other than the fact that wh-elements of all kinds inside the DP may take matrix scope. Furthermore, Greek is a language that does have a definite Determiner, while Tatar does not. Thus the different properties of the A'-[Spec, DP] in Greek⁴² and the A'-[Spec, DP] in Tatar may be due to the fact that Tatar has no overt definite Determiner, and as such [Spec, DP] may be used *exclusively* as an escape hatch, since PossP and KP are morphologically active and distinct functional heads in the Tatar DP.⁴³ Nominal projections in Tatar are more like clausal structures, with a phase head that acts as an escape hatch and additional left periphery projections, than are the nominal projections in Spanish or English, where D hosts agreement features and no other left periphery positions are available in any apparent way (following the basic observation for Hungarian nominal structure in Szabolsci 1994).

3.4.4. Conclusions

Tatar offers evidence in support of the hypothesis in (6) in two ways: first, complements to emotive factive (e.g. *glad*) and semi-factive (e.g. *know*) heads are morphologically DPs; second, extraction out of factive complements patterns with extraction from other definite DPs in the language. Wh-extraction is equally acceptable from CP or DP complements (but not from tensed adjuncts, crucially, as shown in (78)). This section offers a counter-argument to other recent syntactic explanations of factivity

⁴² The only data presented in Alexiadou (2001) is of possessor extraction.

⁴³ This is a fairly strong claim, one that should be well corroborated with other evidence from Tatar as well as from other languages without overt Determiners. Based on the data in this thesis, though, it seems a plausible line of inquiry.

which attempt to derive islandhood of factive complements from the syntactic mechanisms which yields their definiteness or referentiality (de Cuba 2007; Haegeman and Ürögdi 2010; Melvold 1991; Ormazabal 2005). Based on this data, the mechanism that UG provides for deriving definiteness or referentiality is neither necessary nor sufficient to explain extraction patterns in languages like Tatar.

Many details of such an analysis are left to be worked out in future work, such as the exact mechanisms and motivation of the D-to-K movement which passes the [definite] feature from the D projection to the K projection. However, this analysis seems to be on the right track. I also include Table 6 as a summary of the main points in this section for Tatar.

Table 6 Projections in the Tatar DP

	Overt def D ⁰	Overt PossP	Overt KP	Extraction from def DP	Extraction from factive compl
Tatar	No	Yes	Yes	Yes	Yes

3.5. Mayangna

In this section, I will discuss the predictions of the hypothesis in (6) for Mayangna. Mayangna, like Tatar, displays complements to factive heads (like *know* or *glad*) that are morphologically DPs. They are in fact tensed CPs headed by the overt definite Determiner *kidi*. Thus Mayangna offers an important contrast to Tatar in the type of DP used for complements to factive heads, as well as the simple fact that Mayangna has an overt definite Determiner, which Tatar lacks. In this section we will raise more questions than we will be able to answer.

3.5.1. Distribution

As with Tatar, the overt morphology of Mayangna actually supports the hypothesis that factive complements are DPs. As shown in §1.1.4., complements to both emotive factive *alasna* ‘be glad’ and to semi-factive *nû* ‘know’ may be introduced by the definite Determiner *kidi*, while *kulnin* ‘to think’ may not. (85) and (86) show *alasna* ‘glad’ with a complement CP headed by the definite D *kidi*, and (87) shows *alasna* with a causal adjunct headed by *yulni*, which is an inflected Noun which means ‘because’ in this context, although it is not a Complementizer. This adjunct construction appears more frequently in Mayangna than in the other languages under consideration here.

- (85) ûba alasna yang [aiwa_na_man kidi]
 very glad 1s come_pst_2s D
 ‘I’m very glad that you came.’

- (86) [Eric damai waspa dîni kas_na kidi] Eliza alasna ki
 Eric yesterday fish eat_pst.3s D Eliza glad 3s
 ‘Eliza is glad that Eric ate the fish yesterday.’

- (87) alasna yang [Eric waspa dîni kirh_wa yulni]
 glad 1s Eric fish descale_3s because
 ‘I’m glad that (because) Eric descaled the fish.’

The structure for (85) and (86) is exactly as diagrammed in the hypothesis in (6);⁴⁴ a definite Determiner takes a CP as its complement, and D projects, Merging with the emotive factive *alasna* ‘glad’. Below, (88) shows *nû* ‘know’ with a complement lacking the overt Determiner. I am not aware of any difference in meaning or interpretation between sentences like (88), and sentences like (89), but I will leave further inquiry for future work. (88) and (89) both show that *nû* ‘know’ also appears with a CP complement headed by the overt Determiner *kidi*, exactly as shown in the hypothesis in (6).

- (88) Eliza nû ki [Eric damai waspa dîni kas_na]
 Eliza know 3s Eric yesterday fish eat_pst.3s
 ‘Eliza knows that Eric ate the fish yesterday.’

⁴⁴ Alexiadou (2001) also observes a similar (if not identical) structure in Modern Greek, as in (vi).

(vi) to oti irthe
 D C came_3s
 ‘the that he came’

- (89) [Eric damai waspa dîni kas_na kidi] Eliza nû ki
 Eric yesterday fish eat_pst.3s D Eliza know 3s
 'Eliza knows that Eric ate the fish yesterday.'

Below, (90) shows a CP complement to intensional *kulnin* 'to think', and (91) shows that a complement CP headed by D that appears post-verbally is ungrammatical, as is a complement CP headed by D which appears preverbally in (92) with *kulnin* 'to think'.

- (90) Elena kul_wi [Eric ting kau waspa dini kas_na]
 Elena think_3s Eric hand in fish eat_pst.3s
 'Elena thinks that Eric ate the fish with his hands.'

- (91) *Elena kul_wi [Eric ting kau waspa dîni kas_na kidi]
 Elena think_3s Eric hand in fish eat_pst.3s D
 'Elena thinks that Eric ate the fish with his hands.'

- (92) *[Eric ting_kau waspa dîni kasna kidi] Eliza kul_wi
 Eric hand_in fish eat_pst.3s D Eliza think_3s
 'Elena thinks that Eric ate the fish with his hands.'

Therefore, Mayangna, like Tatar, shows the D label on the complement to factive heads *alasna* 'glad' and *nû* 'to know' overtly in the morphology of the embedded clause, being introduced by the definite Determiner *kidi*. The overt Determiner is

ungrammatical with complements to *kulnin* ‘to think’, as expected in the hypothesis in (6). I include Table 7 as a summary of the relevant distribution facts for Mayangna.

Table 7 Distribution of Mayangna DPs

	DP-over-CP	Tensed CP
Emotive factive <i>alasna</i> ‘glad’	√	√
Semi-factive <i>nû</i> ‘know’	√	√
Intensional <i>kulnin</i> ‘to think’	*	√

3.5.2. Extraction Facts

As noted in §2.4.2., in Mayangna, adjuncts are the only domains from which elements may be extracted (Salomon, in progress). This is exactly contrary to what has been observed in many languages (Cattell 1976, Huang 1982). While I don’t offer an analysis of this fact here, it is possibly a case of clausal pied piping, where the entire adjunct moves to [Spec, CP] in order to achieve the convergent configuration (see Ortiz de Urbina 1989 for clausal pied piping in Basque, or Benedicto 1992 for the same in Latin).

Many questions have arisen concerning the basic configuration of predicates with clausal complements in Mayangna, since object clauses may not appear between the

subject and verb in an S-O-V pattern, as with more canonical head-final languages like Tatar. Since Mayangna is a head final language, as shown by (93), we would expect to see S-CP-V, but (94) shows that this configuration is ungrammatical. The clausal complement is grammatical in a CP-S-V configuration, as in (95). These are difficulties that are acknowledged and will be the topic of future work.

(93) Eric waspa dîni kirh_wi

Eric fish descale_3s

‘Eric is descaling the fish.’

(94) *Elena [Eric damai waspa dîni kas_na] kul_na

Elena Eric yesterday fish eat_pst.3s think_pst.3s

‘Elena thought that Eric ate fish yesterday.’

(95) Elena kul_wa dai [Eric damai waspa dîni kas_na]

Elena think_3s pst Eric yesterday fish eat_pst.3s

‘Elena thought that Eric ate fish yesterday.’

In order to evaluate the hypothesis in (6), as we did for the other languages, it is necessary to observe some basic facts about extraction from definite DPs in Mayangna. I include here data representing extraction from a definite DP which is object to the verb *talnin* ‘to see’. (96) is a base sentence with a definite DP object to *talnin* ‘to see’; (97)

shows that the object *siwi* ‘wild pig’ of the Noun *îyang*⁴⁵ ‘hunter’ appearing as the wh-word *ais* ‘what’ may not take matrix scope; and (98) shows that an adjunct wh-element *angkaupak* ‘from where’ may not take from a definite DP object.

(96) Awastingni kaupak siwi îyang kidi damai tal_na_yang.

Awastingni from wild.pig hunter D yesterday see_pst_1s

‘Yesterday I saw the hunter of wild pigs from Awastingni.’

(97) *Awastingni kaupak ais îyang kidi tal_na_man_h?

Awastingni from what hunter D see_pst_2s_Q

‘What did you see the hunter of from Awastingni?’

(98) *Ang_kaupak siwi îyang kidi damai tal_na_man_h?

where_from wild.pig hunter D yesterday see_pst_2s_Q

‘From where did you see the hunter of wild pigs?’

⁴⁵Mayangna does have some sort of PossP which registers nominal agreement on N, as in (vii).

- (vii) a. yang ayang_ki
I name_poss1s
‘my name’
b. witing ayang_ni
she name_poss3s
‘her name’

However, the applicability of this fact to the derivation at hand is not clear, since there is no nominal agreement morphology on *îyang* ‘hunter’ in (103)-(105), nor does this nominal agreement appear on the factive DP-over-CP complements. In contrast, in both the definite DP and the nominal clause complement in Tatar, as shown in §3.4.2. we do see nominal agreement. The mere presence of nominal agreement, or a PossP may not be sufficient to ensure that [Spec, DP] is an escape hatch in a given language, but rather the role of PossP in the specific derivations at work. This will need to be taken into account in more detailed future analyses.

We see from (97) that a wh-object *ais* ‘what’ to the head Noun may not take matrix scope out of a definite DP object. Similarly, a wh-adjunct *angkaupak* ‘from where’ cannot take matrix scope out of a definite DP object as in (98).

We expect that extractions out of DP-over-CP factive complements will behave similarly to extraction out of other definite DPs in Mayangna, that is, it will be ungrammatical. However, as noted in §2.4.2., there appear to be additional restrictions on extraction in Mayangna, the detailed analysis of which lies beyond the scope of this study. Below we see DP extraction of adjuncts from the complement to emotive factive *alasna* ‘glad’ in (99), from the complement of semi-factive *nû* ‘know’ in (100), both of which are ungrammatical, as expected. Additionally, in (101) we have the extraction of an adjunct from the complement of intensional *kulnin* ‘to think’, which is also ungrammatical.

(99) *[Eric mâmpat waspa dini kas_na kidi] Eliza alasna dai yah?

Eric when fish eat_pst.3s D Eliza glad past Q

‘Eliza was glad that Eric ate fish when?’ (non echo reading)

(100) *[Eric mâmpat waspa dini kas_na kidi] Eliza nû yah?

Eric when fish eat_pst.3s D Eliza know Q

‘Eliza knows that Eric ate the fish when?’ (non echo reading)

(101) *Elena kul_na [Eric mâmpat waspa dini kas_na] yah?

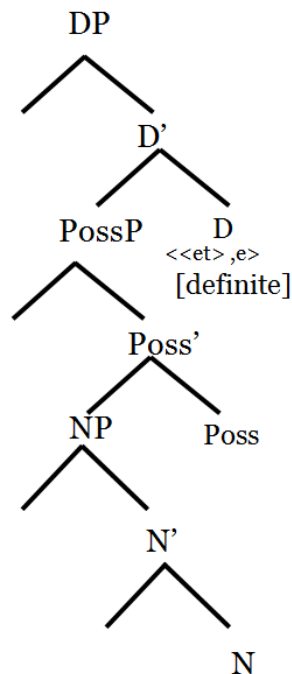
Elena think_pst.3s Eric when fish eat_pst.3s Q

When did Elena think that Eric ate fish?’

The wh-adjunct *mâmpat* ‘when’ is unable to take matrix scope from the complement to *alasna* ‘glad’ and *nû* ‘know’ as in (99) and (100) respectively. The adjunct *mâmpat* ‘when’ is also unable to take matrix scope from inside a complement to the canonical transitive intensional head *kulnin* ‘to think’ as in (101), a fact which is surprising from a cross-linguistic perspective, but expected in Mayangna based on the object extraction data in §2.4.2. Clearly more finely tuned tests will be necessary in order to determine the nature of [Spec, CP] and [Spec, DP] in Mayangna. This task will be set aside for future research.

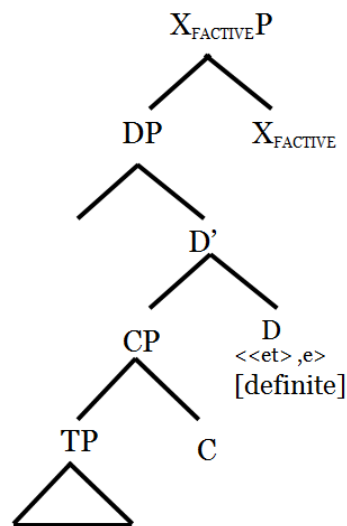
I include a simplified diagram of a definite DP in Mayangna as (102).

(102) Mayangna definite DP



I also include a diagram of a factive complement as (103), drawing attention to the fact that the Determiner slot, postulated to be null in English and Spanish, is the overt definite Determiner *kidi* in Mayangna emotive factive and semi-factive predicates. The more exact nature of wh- extractions in this language is left for future research.

(103) Mayangna factive complement



3.5.3. Conclusions

The extraction facts for Mayangna are far from straightforward. Future study will be necessary in order to determine the nature of wh-movement in this language. However, based on the overt definite Determiner used to introduce complements to emotive factive *alasna* ‘glad’ and semi-factive *nû* ‘know’, we can say that the data from Mayangna support the hypothesis in (6), that complements to factive heads are DPs.

Furthermore, we may expect Mayangna to exhibit extraction patterns more similar to English and Spanish, based on the fact that Mayangna has an overt definite Determiner which encodes definiteness, and thereby limiting the types of elements which may appear in its Specifier position. I include Table 8 as a summary of the main points in this section for Mayangna.

Table 8 Projections in the Mayangna DP

	Overt def D^0	Overt PossP	Overt KP	Extraction from def DP	Extraction from factive compl
Mayangna	Yes	Yes	No	No	No

3.6. Conclusion

In this chapter I have provided evidence for the claim that the syntactic mechanism that yields the definiteness or referentiality of the factive complement is not what makes such complements islands to extraction cross-linguistically. In Tatar, factive complements are both definite and referential, yet allow for extractions. My claim is that the determining factor in the islandhood of factive complements is the properties of the DP, specifically [Spec, DP], in each language, since factive heads take definite DP complements. Some of the details of these claims are left for future research, however the data in this chapter provides evidence that the hypothesis in (6) is accurate.

The purpose of this chapter was to evaluate the prediction made by the hypothesis in (6), that clausal complements to the semi-factive heads like *know* and the emotive factive heads like *glad* are in fact DPs, whether headed by an overt (pronounced) Determiner or a covert one. I have done this using the distribution patterns of complements to these lexical heads, showing that under the right circumstances (to be discussed in the Chapter 4), all factive predicates may take DP complements⁴⁶, while intensional heads like *think* may not. Tatar and Mayangna are especially important in this section, since both languages use overt Determiners to signal complements to factive heads like *know* or *glad*; Tatar uses participial clauses while Mayangna uses tensed CPs headed by the overt definite Determiner *kidi*.

Furthermore, in Spanish, English, Tatar, and Mayangna, extraction out of factive complements patterns with extraction out of other definite DPs: in English, Spanish, and Mayangna, it is generally disallowed, while in Tatar, it is generally grammatical. This indicates that DP has different properties in Tatar than it has in English, Spanish, or Mayangna. We pointed out some additional functional categories, PossP (Possessor Phrase) and KP (for morphological case), which are active in Tatar but apparently not so in English and Spanish, their features being associated with the overt definite Determiner and its Specifier instead. The presence of this extra functional projection and the absence of an overt definite Determiner in Tatar may allow for [Spec, DP] to remain open as an escape hatch for the moving element in wh-questions. This claim

⁴⁶ Or PP complements, as in the cases where an Adjective or pronominal Verb are not Accusative case assigners. In these cases the Preposition is inserted in order to fulfill the requirement that all DPs have Case.

should be tested against a variety of other languages with rich nominal morphology, including an active PossP in the derivation of factive complements and which lack overt definite Determiners. I include Table 9 as a summary of the elements in the structure of the definite DP in each language, as well as the behavior observed in each language in this chapter.

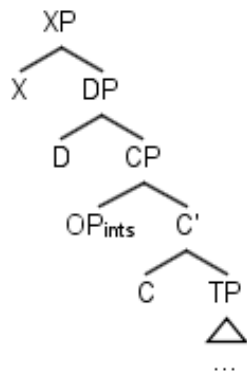
Table 9 Summary of the main points from Chapter 3

	Overt def D^0	Overt PossP	Overt KP	Extraction from def DP	Extraction from factive compl
Spanish	Yes	No	No	No	No
English	Yes	No	No	No	No
Tatar	No	Yes	Yes	Yes	Yes
Mayangna	Yes	Yes	No	No	No

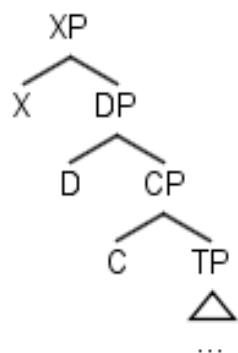
As we see in Table 9, what sets Tatar apart from the other languages in this study is its lack of an overt definite Determiner and instead has rich nominal morphology. Future study will focus on this aspect of the Tatar DP, and how these facts, when taken together, may give rise to the behavior observed. I do not claim that a single factor causes any observable phenomenon in the language; rather, the interplay between the different features and their distribution within the phrasal architecture of a language will ultimately dictate which behaviors are manifested.

I have included in §3.1 a discussion of the derivation of complements to factive heads which are headed by an overt D label element, a *wh*- word. In this derivation, I have shown that a hypothesis that postulates a null NP or DP above all factive CPs offers the wrong prediction. Postulating a syntactic selectional restriction that factive heads take D label complements regardless of how they are derived, however, is a reasonable solution. The semantic selectional restrictions on semi-factive (e.g. *know*), emotive factive (e.g. *glad*), and intensional heads (e.g. *think*) will be the topic of Chapter 4. I repeat the hypothesis in (6) below as (104), for ease of reference.

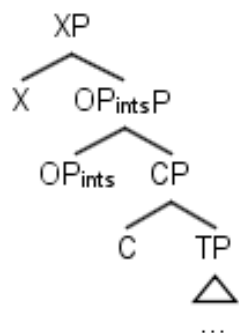
(104) a. D-label complement to an emotive factive head (e.g. *glad*))



- b. D-label clausal complement to a semi-factive head (e.g. *know*)



- c. OP_{ints}-label complement to a propositional/intensional head (e.g. *think*)



CHAPTER 4. MAPPING THE SYNTAX TO THE SEMANTICS: A FIRST APPROACH

4.0. Introduction

In Chapter 3, I provided evidence that both semi-factive heads (e.g. *know*) and emotive factive heads (e.g. *glad*) take D label complements. In this chapter, I will discuss the mapping of the syntactic objects in the derivation of semi-factive and emotive factive heads to the semantics. This chapter is an outline for future research of this aspect of the syntax-semantics interface. I will discuss two elements of the derivation of factive predicates that are important in the mapping process: 1) the semantic selection restrictions of each lexical head, and 2) an intensional Operator that is Merged into the derivation of emotive factives and intensional predicates.

The analysis in this chapter will focus on the OP_{ints} that I argue is Merged into the derivation of an emotive factive predicate (e.g. *glad*) that is absent in the derivation of semi-factive predicates (e.g. *know*). I will show that in English and Spanish, these two classes of predicates display different semantic and morphological behavior in addition to displaying unique selectional restrictions on DP complements, all of this indicating that although they both select D label complements (as shown in Chapter 3), these D label complements have different internal syntactic structures.

Emotive factives (e.g. *glad*) are shown to display presuppositions of a different flavor than semi-factives (e.g. *know*), somewhat more like propositional/intensional predicates (e.g. *think*) under certain circumstances (Kiparsky and Kiparsky 1970, Karttunen 1971). Emotive factives (e.g. *glad*) share the syntactic property of having a D-label with semi-factives (e.g. *know*), but the semantic and morphological differences between the two classes of predicates suggest an additional element in the structure of the emotive factives (e.g. *glad*), which I claim to be some sort of intensional Operator which binds the event argument of the Source argument (after Kratzer 1989).

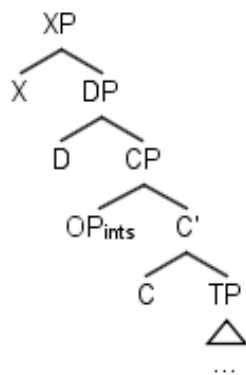
Essentially, I propose that while complements to both semi-factive heads and emotive factive heads are part of the conversational common ground (hence the appellation ‘factive’), the emotive factive derivation contains an additional operator which binds the event variable in the embedded clause, which gives the listener access to possible worlds other than the actual world of the utterance, specifically the worlds that the matrix Experiencer is glad about, in the case of *glad* (see Hintikka 1969). Since this operator is absent with semi-factives, all clauses embedded under semi-factives are interpreted against the actual world of the utterance rather than worlds quantified over by the attitude of the matrix Experiencer.

The remainder of this chapter is organized as follows. §4.1. shows that semi-factive and emotive factive heads have different selectional restrictions for their DP complements. §4.2. discusses the different flavors of presupposition demonstrated by semi-factive and emotive factive predicates, indicating an additional element in the derivation of emotive factives, which I argue to be some kind of intensional Operator.

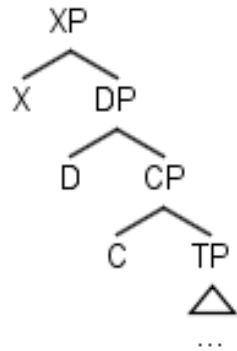
Finally, §4.3. discusses the subjunctive morphology that is Spelled Out on the embedded verb with emotive factive predicates in Spanish (and sometimes in English), but not semi-factive ones. I argue that this subjunctive morphology is the Spell Out of an intensional Operator. §4.4. will contain a brief conclusion and directions for further research.

I repeat here the hypothesized structures for semi-factives and emotive factives from §1.2. This chapter focuses on the presence of the (intensional) Operator that is present in emotive factives but absent in semi-factives, as well as the selectional restrictions of the lexical heads themselves. The discussion in this chapter will concern mainly English and Spanish; however, data from Tatar or Mayangna will also be used when appropriate to show that the same analysis may apply to these languages.

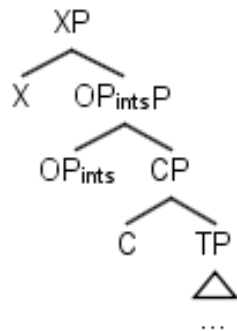
- (1) a. D-label complement to an emotive factive head (e.g. *glad*)



- b. D-label clausal complement to a semi-factive head (e.g. *know*)



- c. OP_{ints} -label complement to a propositional/intensional head (e.g. *think*)



4.1. Selectional restrictions on DP complements

In this section, I will show that emotive factive heads (e.g. *glad*) have certain selectional restrictions for DP complements that semi-factive heads (e.g. *know* or *remember*) do not. Specifically, emotive factive heads (e.g. *glad*) are felicitous only with DPs that represent eventualities (whether stative or eventive). I will use some basic intuitions from situation semantics (Barwise and Perry 1983, Kratzer 1989, Elbourne

2005) to offer a potential analysis of the selectional restrictions of emotive factive heads, although most of the details of the analysis will be left for future work.

First off, we see from the following sentences from our four languages that DPs without event structure are infelicitous with emotive factive predicates (e.g. *glad*), as in (2), (6), (9), and (12) below. On the other hand, non-eventive DP complements but are completely felicitous with semi-factive ones (e.g. *know*), as in (5), (8), (11), (14).

In English:

- (2) # I'm glad about this song.
- (3) I'm glad about your decision to stay.
- (4) I know about this song.
- (5) I know this song.

In Spanish:

- (6) #Me alegre de esta canción.
SE be.glad_1s P this song
'I'm glad about this song.'
- (7) Me alegre de escuchar esta canción.
SE be.glad_1s P to.listen this song
'I'm glad that I'm listening to this.'

(8) Me acuerdo de esta canción.

SE remember_1s P this song

'I remember this song.'

In Tatar:

(9) #min žır_gä şat

I song_DAT glad

'I'm glad about this song.'

(10) min [bu žır_nı teñla_ğan]_ğä şat

I this song_ACC listen_GAN_DAT glad

'I'm glad that I'm listening to this song.' or 'I'm glad about listening to this song'

(11) min bu žır_nı häterl_im.

I this song_ACC remember_1s

'I remember this song.'

In Mayangna:

(12) #yulni kidi alasna yang

story D glad 1s

'I'm glad about the story.'

(13) ũba alasna yang [aiwa_na_man kidi]

very glad 1s come_pst_2s D

'I'm very glad that you came.'

- (14) yang yulni kidi nû yang
 I story D know 1s
 'I know this story.'

As these data show, cross-linguistically, certain emotive factive predicates (e.g. *glad*) are infelicitous with DP complements without event structure, while semi-factive predicates (e.g. *know* or *remember*) are felicitous. I've proposed and provided evidence for the claim in Chapters 2 and 3 that both emotive factive and semi-factive heads take DP complements. These facts suggest that the emotive factive heads themselves have certain semantic selectional restrictions lacking in semi-factives. The intensional Operator hypothesized to be present in the derivation of emotive factive predicates offers on potential analysis of this discrepancy. Likewise, the situation semantics of Barwise and Perry (1983), Berman (1987), and Kratzer (1989) offers further insights on this different behavior between the two classes of factive predicates.

In Kratzer (1989), a situation is defined as a state of affairs (in the sense of Armstrong 1978), consisting of individuals, or particulars, and properties of particulars or relations among distinct particulars. There are two types of particulars; "a thick particular, which is a particular with all its properties, and a thin particular, which is a particular taken in abstraction from all its properties" (Elbourne 2005). The example that Kratzer (1989) uses to demonstrate this system is a proposition like 'Angelika Kratzer is hungry'. This situation represents a subpart of the world that "consists of Angelika Kratzer's thin particular (at a certain time) plus the property (instantiated by the thin

particular) of being hungry” (Elbourne 2005). In short, a situation is a subpart of a possible world, and is made up of one or more thin particulars and its properties or relations. A simple DP denoting a particular (individual) does not qualify as a situation, since no property or relation is predicated of it.

What I am proposing for emotive factive heads (e.g. *glad*) is that their complement must be of type <s>, a situation. As for semi-factive heads (e.g. *remember* or *know*), they have no such selectional restriction; they may take either a type <s> or type <e> (individual, or thin particular) complement. This distinction correctly captures the difference between semi-factive and emotive factive heads, and also puts emotive factives into the same semantic class as intensional heads (e.g. *think*) which similarly cannot take a simple DP (type <e>) complement. The difference between the emotive factive class and the intensional class then is largely syntactic, an emotive factive may take a DP complement as long as it is of type <s>, while an intensional may not take any DP complement, only CPs headed by an intensional Operator, which are of type <s>, since the intensional Operator must bind an event argument, or something like it.⁴⁷

This analysis predicts then that a referential DP will be acceptable as a complement to an emotive factive head if that DP has an eventive reading. This is borne out by examples like (15):

⁴⁷ One large detail that must be explained based on these claims is the nature of the D label to emotive factive predicates. If the main task of D is to shift a predicate of type <et> to a particular of type <e>, then does this entail that the D label of semi-factives is truly type <e> while the D label of emotive factives is somehow of type <s>? The details of type-shifting is not addressed here, but should be accounted for in a more detailed analysis.

- (15) Me alegro de las historias que se cuentan en este local.
 SE be.glad_1s P D stories C SE tell_3p in this place
 'I'm glad about the stories that are told around here.'

(15) is felicitous, presumably made so by the fact that the DP *las historias que se cuentan en este local* has an eventive interpretation, something like *I'm glad that these stories are told around here*. The fact that an event argument is present in the relative clause makes the sentence felicitous.

In fact, it is possible that the syntactic representation of a type <s> complement is any constituent which contains an event argument of some kind (see Borer 2005 for more information on the syntactic projection of the event argument). In fact, Kratzer (1998) proposes that both Davidsonian event semantics and situation semantics seem to be describing the same phenomena. Thus it is unsurprising that a Lexical head which selects a complement of type <s> is one which occurs felicitously with a complement with an event argument of some kind present in the derivation.⁴⁸ This all suggests that there is a close relationship between event argument which must be present in the clausal complement to emotive factive heads and the notion of compatible situations.

While the details of this analysis are not worked out in this thesis, a solution based on the intersection of situation semantics and Davidsonian event semantics offers a

⁴⁸ I do not make any attempt at describing the syntactic representation of stativity, for example, in which no event argument is present in any obvious way. Any complement representing an eventuality is felicitous with emotive factive and intensional predicates, not just purely eventive ones.

promising explanation to the different semantic restrictions placed on complements to emotive factive heads (e.g. *glad*), specifically that their complements must represent an eventuality (whether eventive or stative). It is not clear whether an intensional Operator is Merged into the derivation of eventive DPs as it is with CP complements to emotive factives. I leave this question for future research as well.

4.2. Flavors of Presupposition: the intensional Operator

After discussing the selectional restrictions of emotive factive (e.g. *glad*), semi-factive (e.g. *know*) and intensional (e.g. *think*) heads, in this section, I will discuss the second element important to this analysis: the proposed intensional Operator which binds the event variable in the embedded clause of emotive factives and intensionals. This intensional Operator determines which subset of possible worlds of the set of all possible worlds is available for interpretation of the embedded proposition (Hintikka 1969)⁴⁹. With the appropriate context, there is a clear difference between the interpretation of the embedded clauses under semi-factives (e.g. *know*) and those embedded under emotive factives (e.g. *glad*). While both types of ‘factives’ require that the event in their embedded clause represent information which is already a part of the common ground of the conversation (i.e., shared information by the speaker and hearer), emotive factives seem to have an additional ability to be interpreted against

⁴⁹ I do not make a very clear distinction between ‘possible worlds’ and ‘compatible situations’ in this chapter. However, such clarifications and distinctions will be necessary in a more finely grained analysis.

worlds or situations that are not part of or true of the actual world, but are believed to be the case by the Experiencer of the emotion in the emotive factive.

(16) Bill was so glad that Suzy called and left that message. I just didn't have the heart to tell him that Suzy never called. I wrote that message as a joke.

(17) #Bill knew that Suzy called and left that message. I just didn't have the heart to tell him that Suzy never called. I wrote that message as a joke.

(18) Bill thought that Suzy called and left that message. I just didn't have the heart to tell him that Suzy never called. I wrote that message as a joke.

(16) and (18) are both felicitous, while (17) is not. A response to a statement like (17) might be, 'Bill didn't know she called, he only thought she did'. Kratzer (1998) discusses such conditions which hold between situations and the worlds that contain those situations in different contexts. In order for a simple proposition to be true, the situation *s* which exemplifies a proposition *p* should be true not only in the situation *s*, but in the world that contains *s*. In (16), (17), and (18) above, the event *Suzy called* is true according to what the speaker is glad about, knows, or believes, according to the main predicate. However, when the proposition in the situation *s* is false in the actual world, both *think* and *glad* may still be felicitous, while the predicate with *know* is infelicitous.⁵⁰

⁵⁰ This view is essentially a simplified version of the claim in Kratzer (2002), where knowledge is described as a justified *de re* belief of *facts*, where facts are "worldly

This distinction between worlds in which the embedded proposition is interpreted is also apparent when the matrix predicate is negated, as in (19) and (20).

(19) John isn't glad that Suzy called.

(20) John doesn't know that Suzy called.

In (19), John (the Experiencer argument) is still aware of the fact (or at least believes it to be the case that) Suzy called, even though the matrix predicate is negated. The speaker of (19) is also aware that Suzy called. In (20), John is not aware that Suzy even called, but the speaker is. Thus matrix Negation interacts in different ways with the relationship between the matrix Experiencer and the embedded proposition. It seems that while both *glad* and *know* are part of the common ground of the conversation shared by the speaker and the hearer, only *glad* allows for access into the possible worlds compatible with what is believed to be true by the Experiencer argument (see also the discussion in Basse 2008, although no differentiation is made between emotive factive and semi-factive predicates there).

I suggest that this disjunction in interpretation of the embedded event and the actual world of the utterance is due to an intensional Operator present in the derivation of complements to emotive factive heads (e.g. *glad*), but not ones to semi-factive heads

things", or situations which are particulars in the actual world. Therefore, if a situation (particular) does not exist in the actual world, it cannot be 'known'. On the other hand, a 'propositional fact' allows for possible worlds. The distinction between actual world facts and propositional facts as these concepts relate to semi-factive versus emotive factive predicates will be developed in future work.

(e.g. *know* or *find out*)⁵¹. Since no intensional Operator that allows a disjoining of the situations in the worlds that the Experiencer ‘knows’ to be true versus those which are true in the actual world is Merged into the derivation of semi-factives like *know*, the situation in the embedded clause in (17) above must be evaluated against the default world, the actual one of the utterance. In other words, the proposition exemplified by the situation in the embedded clause must be true not only in that minimal situation which Bill ‘knows’, but also in the actual world. Since in the actual world, Suzy didn’t call, (17) is infelicitous with the given context. Both (16) and (18) are felicitous, even though in the actual world Suzy didn’t call, since the embedded clause may be interpreted only against the situation in the embedded clause that the matrix Experiencer thinks (believes) or is glad about, respectively.

Karttunen (1971) discusses the fact that some factive verbs lose their factivity when they appear in conditionals. Compare (21), a predicate with *glad* which retains the Experiencers commitment to the truth of the situation in the embedded clause, with (22), a predicate with *know* in which the Experiencer is not committed to the truth of

⁵¹ While I am essentially saying that no intensional Operator is Merged into the derivation of semi-factives, it may be more accurate to say that there is in fact some kind of worlds Operator; my claim though is that this (potential) Operator with semi-factives does not allow for a disjunction of truth values between the actual world of the utterance and the situation in the embedded clause. This Operator in the semi-factive would be of a different type than the emotive factive and intensional operator, therefore I do not include it in the discussion in this chapter.

the embedded situation. In other words, in conditionals, *know* (and other semi-factives) lose their factivity.⁵²

(21) If John were glad that he lied, he'd confess it to everyone.

(22) If John knew that he lied, he'd confess it to everyone.

In (21), John's confession would be *I'm glad I lied*, while in (22), his confession would be *I lied*. *If* interacts differently with the embedded event with emotive factives than it does with the embedded event of semi-factives, similar to what we observed with the scope of Negation above, in (19) and (20). These *if* facts may be accounted for in an analysis like the one in this chapter based on von Stechow and Iatridou's (2001) Modal *If*-Hypothesis, which states that "an *if*-clause can only restrict quantifiers over possible situations/worlds, not quantifiers over individuals." If an intensional Operator which quantifies over the situation (or event argument, as stated earlier) is present in the derivation of the emotive factive but not the semi-factive, then this disjunction could have an explanation. Again, while the details and some of the specific mechanisms must be worked out in much more detail, a potential analysis could be as follows.

When the proposition in the matrix clause with *know* in (22) is restricted by *if*, the fact that the embedded situation and the matrix proposition must be evaluated in the

⁵² Of course, the picture becomes complicated once the tense of the main verb or change of subject is taken into account, however (21) and (22) are minimal pairs which show that there is in fact a different flavor of presupposition between the two, as Karttunen (1971) pointed out.

actual world allow *if* to restrict the quantification of the embedded situation as well as the matrix proposition, and presupposition vanishes. This is unsurprising based on what we observed with Negation facts, since there is no necessary link between the Experiencer and the embedded event with semi-factives as there is with emotive factives. The question in (22) becomes whether or not he *actually* lied. On the other hand, when the quantification of the situation in the matrix clause with *glad* in (21) is restricted by *if*, due to the intensional Operator in the embedded clause which disjoins the truth value of the embedded situation from the proposition in the matrix clause, the quantification of embedded situation by the intensional Operator remains unaffected by the restriction domain of *if*. The additional intensional Operator essentially blocks restriction by *if* in the matrix clause, and presupposition (or rather the lack of evaluation of its truth in the actual world), remains intact. The question is whether John is glad he lied, not whether or not he *actually* lied. The intensional Operator creates a link (through binding of the event argument) between the embedded event and the possible worlds/compatible situations in the mind of the Experiencer argument.

Since emotive factives like *glad* and intensionals like *believe* have this second-order operator, it is not surprising that their complements must be propositions (or situations, as set out in §4.1.), while semi-factives have no such restriction. These claims are quite ‘broadstroked’ and many details of this analysis are left for future research.⁵³

⁵³ For example, it may be the case that semi-factives have an Operator in their embedded clause which quantify over individuals, making them exempt from the Modal *If*-Hypothesis as if there were no quantifier at all. This could also explain why the semi-factives freely accept DP complements of type <e>. The main difference then between

4.3. Spell Out of the Intensional operator

As observed in §1.1.1., the verb in the complement clause of emotive factives is Spelled Out in the subjunctive mood in Spanish as in (23), while the verb in the embedded clause of semi-factive predicates is Spelled Out in the Indicative, or default mood (Quer 2009), as in (24).⁵⁴

(23) Me alegro de que hayas venido.

SE be.glad_1s P C AUX_subj.2s come_PART

‘I’m glad you’ve come.’

(24) *Me acuerdo de que hayas venido.

SE remember_1s P C AUX_subj.2s come_PART

‘I remember that you’ve came.’

I propose that the subjunctive mood in these sentences is the Spell Out of the intensional operator in the derivation of emotive factive complements. This view is compatible with the proposal in Quer (2001) that the subjunctive is used to mark a “change in the model for the evaluation of the proposition or property expressed by the embedded clause”. The benefit of this type of analysis is that it abstracts away from any

semi-factives and emotive factives would be that semi-factive have a first-order Operator, while emotive factives have a second order Operator. I do not pursue this further here, although it seems a viable possibility.

⁵⁴ There does not appear to be any distinction in the morphological mood of Mayangna or Tatar between emotive and semi-factive predicates. Tatar does use both nominal clauses and tensed CP complements with semi-factive heads, although it is not clear whether this fact has any relevance for this section.

rigid meanings, like irrealis-denoting, being attached to the morphological subjunctive mood.

Quer's (2001) proposal is based on the Stalnakerian theory of assertion (Stalnaker 1978 and subsequent publications). This theory basically states that all utterances are evaluated against a certain context which is made up of common ground shared by the speaker and the hearer (the factivity which we have been discussing), the set of possible worlds compatible with the common ground, the world where the utterance takes place, and a function which assigns values to variables. We have shown that complements to both semi-factives and emotive factives make up part of the common ground shared by the speaker and the hearer. In §4.2. I have attempted to show that the set of possible worlds which are available for evaluation of clauses embedded under emotive factives like *glad* need not necessarily include the actual world of the utterance, while the clause embedded under a semi-factive like *know* must be evaluated against the actual world of the utterance. This is the main semantic difference between emotive factives and semi-factives, which must be accounted for in the syntax.

I propose that the subjunctive in the embedded clause of emotive factives is actually a Spell Out of the intensional Operator Merged with C in the embedded clause, as seen in (1a) in this chapter. The exact nature of this semantic Operator may differ from the purely intensional Operator that Merges with the C and then projects an OpP which then Merges with intensional heads like *think* as in (1c) in this chapter, and in fact they occupy different structural positions as well, since the Operator projects and becomes the label for the Syntactic object in (1c). In both emotive factive and intensional

predicates, the intensional Operator binds the event variable and allows for access to the possible worlds believed to be true by the matrix experiencer or about which the matrix experiencer is glad (Hintikka 1969); the difference being that the embedded proposition is also part of the common ground of the utterance in emotive factive derivations, while the embedded proposition under intensional predicates is not, i.e., it is asserted.

Therefore, in sentences with certain emotive factive heads where indicative appears in the embedded clause and an assertive reading is given (Quer 2001), I claim that no intensional Operator has been Merged into the derivation. For example in (25) and (26) in a different derivation with the verb *alegrar* ‘to make glad’, both subjunctive or indicative mood is grammatical.

- (25) Me alegra que hayas venido.
 me make.glad_3s C AUX_subj.2s come_PART
 ‘It makes me glad that you came.’
- (26) Me alegra que has venido.
 me make.glad_3s C AUX_ind.2s come_PART
 ‘It makes me glad that you came.’

In (25), an operator has been Merged into the derivation, and the subjunctive mood shows up on the embedded verb as a result. In (26), where the indicative mood is present on the verb, I argue that no intensional Operator has been Merged into the

derivation, and therefore the reading of the situation in the embedded clause is interpreted only against the actual world of the utterance, rather than in the possible worlds that the Experiencer is glad about. Since in both cases the embedded proposition is part of the common ground of the utterance, the difference in interpretation is subtle, probably negligible in most cases.

Furthermore, the emotive factive verbs which show assertive/presuppositional ambiguity and may embed a verb in the indicative mood, (27), also allow simple DPs as complements, as in (28). Those derivations which do not allow for a verb embedded in the indicative mood, (29), also may not accept a non-eventive DP complement, (30).

(27) Me alegra que has venido.
 me make.glad_3s C AUX_ind.2s come_PART
 ‘It makes me glad that you came.’

(28) Me alegra esta canción.
 me make.glad_3s this song
 ‘This song makes me glad.’

(29) *Me alegre de que has venido.
 SE be.glad_1s P C AUX_subj.2s come_PART
 ‘I’m glad you’ve come.’

(30) #Me alegre de esta canción.
 SE be.glad_1s P this song
 ‘I’m glad about this song.’

The reason for this is rather straightforward, it is the intensional Operator which should be Spelled Out as the subjunctive with emotive factives, otherwise ungrammaticality ensues as in (29), requires an event variable to bind, otherwise the utterance is infelicitous, as in (30). We should also point out that the derivations with *alegrar* ‘to make glad’ differ with respect to their syntactic configurations. In (27) and (28), *alegra* ‘makes glad’ assigns Nominative case to the clausal or non-eventive DP argument, while in (29) and (30) the Preposition *de* is introduced into the derivation since the Experiencer is assigned Nominative case, and *alegrarse* ‘to be glad’ in these derivations is a pronominal verb, unable to assign Accusative case to its Source of Experience.⁵⁵

As in the previous sections, the details of this analysis are left for future work. One outstanding problem is why an intensional Operator in an emotive factive predicate should always be Spelled Out as subjunctive mood on the embedded verb while the intensional Operator with an intensional predicate is only Spelled Out as subjunctive mood in Spanish if it is within the c-command domain of Negation. I have pointed out a fundamental difference between the context set of emotive factives (e.g. *glad*), which both allows access to the possible worlds about which the matrix Experiencer is glad about *and* is part of the common ground, while the embedded clause under intensional predicates (e.g. *think*) allow access to the possible worlds believed to be true by the

⁵⁵ It should be noted, though, that the pronominal verb derivation in itself does not require an eventive complement, since *acordarse* ‘to remember’, another pronominal verb construction, both takes simple DP complements and embeds a verb in the Indicative mood, as examples from §3.2.1. show.

matrix Experiencer, but does not form part of the common ground of the utterance. The details are to be worked out in future work.

4.4. Conclusion

In this chapter I have used the basic outline of situation semantics to offer a future research path for the analysis of emotive factive (e.g. *glad*) and semi-factive predicates (e.g. *know*). I have discussed two elements that, when viewed together, may explain the distribution patterns on semi-factive and emotive factive predicates. First, emotive factive heads have a selectional restriction which semi-factives do not, specifically, they must take a type <s> complement (§4.1.). Second, an intensional Operator is Merged into the derivation of emotive factives which is absent in the derivation of semi-factives. This may explain both the different flavors of presupposition between the two (§4.2.), as well as the subjunctive morphology on the embedded verb under an emotive factive head (§4.3.).

In Table 10 I provide a table which lays out the basic semantic differences between the three attitude predicates discussed in this thesis. A more fine-grained analysis will be necessary in order to determine the interaction of the three elements indicated in the top row of the table; here in this chapter I have only attempted to determine a definite direction for this future research.

Table 10 Semantic differences between semi-factive, emotive factive, and intensional predicates.

	Part of Common Ground	Must be interpreted against actual world	Complement must be an eventuality
Semi-factive <i>know</i>	Yes	Yes	No
Emotive Factive <i>glad</i>	Yes	No	Yes
Intensional <i>think</i>	No	No	Yes

CHAPTER 5. CONCLUSION

5.1. Wrapping Up

In this thesis I have claimed that both emotive factive (e.g. *glad*) and semi-factive (e.g. *know*) heads select DP complements cross-linguistically. Additionally, I have attempted an analysis of the features and their distribution that make up the phrasal architecture of the DP in each language. As a result, I have provided an analysis of wh-movement restrictions in factive complements (definite DPs) in Spanish, English, Tatar, and Mayangna. I include Table 11 as a summary of the results of Chapter 3, the discussion on the DP-over-CP complement hypothesized in §1.2.

Table 11 Summary of the analysis in Chapter 3

	Overt def D ⁰	Overt PossP	Overt KP	Extraction from def DP	Extraction from factive compl
Spanish	Yes	No	No	No	No
English	Yes	No	No	No	No
Tatar	No	Yes	Yes	Yes	Yes
Mayangna	Yes	Yes	No	No	No

I have also discussed the different elements in the derivation of emotive factive predicates that differentiate them from semi-factive ones. This discussion was based around a first approach to the mapping of the syntax of emotive factives to their semantics. The major conclusions from Chapter 4 of this thesis can be seen in the Table 12 below.

Table 12 Summary of the analysis in Chapter 4

	Selects DP Complement	Part of Common Ground	Must be interpreted against actual world	Complement must be eventuality
Semi-factive <i>know</i>	Yes	Yes	Yes	No
Emotive Factive <i>glad</i>	Yes	Yes	No	Yes
Intensional <i>think</i>	No ⁵⁶	No	No	Yes

We immediately notice that in some domains (select DP complements, complements are part of the common ground of the conversation), emotive factive heads (e.g. *glad*) pattern with semi-factive ones (e.g. *know*). In other domains (may be interpreted against possible rather than actual worlds, select complements of the

⁵⁶ Data in (i) from Ancash Quechua in Cole (1987), in which the intensional *pensa-* takes a nominal clause complement similar to the nominal clauses in Tatar factive complements. But the pattern in this table does hold for Spanish, English, Tatar, and Mayangna, as shown in Chapter 3. The Quechua clause could represent some sort of small clause construction, possibly similar to Exceptional Case Marking constructions in English. This complication should be addressed in future work.

(i) noqa [qam rikaa_ma_nqa_yki]_ta pensa_rqo_o.
 I you see_1_NOMINAL_2_ACC think_PAST_1
 'I thought that you saw me.'

semantic type <s>), emotive factive heads (e.g. *glad*) pattern with intensional ones (e.g. *think*). The isolation and (sometimes partial) explanation of each of these elements in the derivations of attitude predicates has been one goal of this thesis.

The main hypothesis defended here was that cross-linguistically, factive heads select DP complements. Three kinds of evidence were provided for this claim: 1) morphological evidence from Tatar and Mayangna, 2) distribution of DP complements in Spanish, English, Tatar, and Mayangna, and 3) extraction facts and the properties of the definite DP in each language.

I have argued that this hypothesis, based on the selectional restrictions of the factive heads (that they select DP, rather than other categories) offers better predictions across languages than other recent hypotheses (Melvold 1991, Ormazabal 2005, de Cuba 2007, Haegeman and Ürögdi 2010) aimed at explaining the differences between factive and non-factive complements. Those hypotheses are built around a syntactic mechanism that yields the complement CP definite or referential. They are in many ways elegant, but do not seem to be able to account for the Tatar data, which is especially important for the hypothesis defended in this thesis. In Tatar, factive complements (to both emotive factive heads like *şat* ‘glad’ and semi-factive heads like *bel-* ‘know’) are morphologically DPs, and even though they are definite and referential, they allow for both object and adjuncts to be extracted from them. In this way, Tatar provides evidence for my hypothesis based purely on the syntactic category (DP) of the factive complement, and evidence against other recent proposals, that definiteness or

referentiality itself implies restrictions on movement (due to the syntactic configuration which yields definiteness or referentiality).

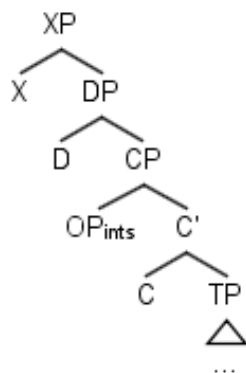
In Chapter 2, I began by discussing the basic structure of the emotive factive predicate, proving with Quantifier binding and extraction facts that the Source of Experience clausal argument is in fact the complement of the lexical head *glad* (contra Hartman 2012) and that the Experiencer argument is introduced via a functional category, as claimed in Viñas i de Puig (2009).

In Chapter 3, I defended the claim that factive complements are definite/referential DPs. Both Mayangna and Tatar offer important morphological evidence for this claim, since in both languages factive complements are morphologically DPs, while complements to the intensional verb of the *think* type may not. In Tatar, factive complements are nominal clauses, while in Mayangna they are tensed CPs headed by the overt definite Determiner *kidi*. It was also observed that in Spanish, English, and Tatar, factive complements behaved identically to definite DPs in terms of extraction from them. In Spanish and English this meant very marginally acceptable object extraction and no adjunct extraction from both definite DPs and factive complements; for Tatar this meant grammatical object and adjunct extraction from both definite DPs and factive complements. The hypothesis has proved flexible enough to handle a variety of different behaviors with no additional mechanisms. The properties of [Spec, DP] based on the way in which each language projects features in the DP field was provided as an explanation for these cross-linguistic differences.

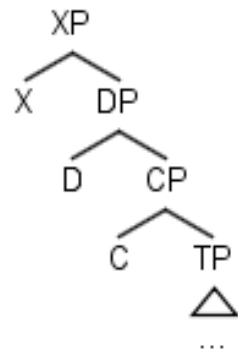
In Chapter 4 I laid out a broad stroked first approach to an analysis of the distinct elements in the derivation of emotive factive predicates which sets them apart from semi-factives, a topic somewhat neglected in the literature on the ‘factive’ verb class. Mostly I have supported the view that the emotive factive derivation includes an intensional Operator of some sort which binds the event variable in the complement clause, allowing the proposition in the embedded clause to be evaluated in possible worlds, rather than the actual world. Since both semi-factive and emotive factive complements form part of the common ground of the speech act, this difference is slight, but clear in well-defined contexts, or when the whole predicate is under the scope of *if*. Chapter 4 raised more questions than it answered; although a good idea of how to proceed was ultimately shown.

I repeat here as (1) the hypothesized structures for emotive factive predicates, semi-factive predicates, and intensional predicates.

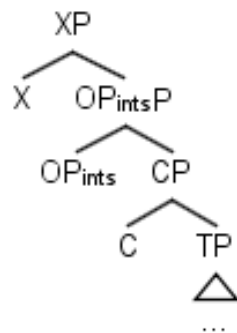
- (1) a. D-label complement to an emotive factive head (e.g. *glad*)



- b. D-label clausal complement to a semi-factive head (e.g. *know*)



- c. OP_{ints}-label complement to a propositional/intensional head (e.g. *think*)



5.2 Areas for future research

In many ways, this thesis has served to sharpen the types of questions asked about the structure of factive predicates and other attitude predicates cross-linguistically. The solutions that were offered remain to be investigated fully. For instance, the claim that factive complements are DPs requires a much deeper understanding of the architecture of the DP in each language discussed. Specifically, a clear understanding of the status of [Spec, DP], which appears to act as an escape hatch for extraction in Tatar, but not in

Spanish, English, and Mayangna, is needed. (1) above shows the directions taken in this thesis to offer a solution to this problem. In Chapter 3 I presented data that supports the descriptive generalization that this appears to be the case, and while certain features and projections in the DP domain were signaled as important to the analysis, much work is left to be done. Clearly, more research into this topic is required before we really understand the processes at work in the syntax of definite DPs and factive complements.

At nearly every turn on this journey, Mayangna has resisted easy analysis. In terms of the structure of a sentence with clausal complements, even the ‘canonical’ attitude predicates *nû* ‘know’ and *kulnin* ‘think’, provided interesting challenges. In both of these predicates as well as with *alasna* ‘glad’, the order of constituents was not SOV as expected since Mayangna is a head final language, but rather either OSV or SVO. These configurations are not common with canonical transitive predicates. More work needs to be done in order to achieve an understanding of basic clausal architecture in Mayangna. Furthermore, the exact nature of wh-movement in Mayangna needs to be sharpened. Although Mayangna is a wh-in-situ language, it does obey certain locality constraints. Surprisingly, though, wh-elements may take scope from within an adjunct clause, though not from within a complement clause. This is exactly the opposite of languages like Spanish and English. The mechanisms and structures that determine why this is so will also require more fine-grained analyses.

Finally, the entirety of Chapter 4 represents a proposed plan of attack for the study of the mapping of the syntactic structures to the semantics of attitude predicates,

specifically the analysis of the differences between emotive factive complements like *glad* and semi-factives ones like *know* in terms of possible worlds/situations of interpretation. I am more than aware of the shortcomings and insufficiencies of the analysis attempted in Chapter 4, although I hope to have shown that the procedures and concepts expressed there constitute a solid base from which to proceed the discussion of the different flavors of factivity and the syntax/semantics interface.

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